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From the ashes:

Building 3001

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- Attract highly qualified personnel to the Air Force Civil Engineering and Services career fields.
- Promote effective training, education, and retention.
- Communicate vital concepts, policies, and practices which affect the wartime readiness of the United States Air Force.
- Promote professionalism and devotion to duty.
- Stimulate planning for the wartime survival of our personnel, weapons systems, and facilities.
- Develop Air Force stewardship of the well-being, quality of life, and facilities support to Air Force personnel and their families throughout the world.
- Promote awareness of the efficient, effective, and essential facilities needs of the Air Force.
- Transfer knowledge of Air Force Engineering and Services technical and scientific achievements.
- Promulgate teamwork among the Air Force Engineering and Services' total force.
- Achieve a professional dialogue to enhance the thought, development, and contributions of the Engineering and Services team worldwide.

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Editor's Note: The article below is based on remarks made before the Base Civil Engineering Course (MGT 001) at the School of Civil Engineering, Air Force Institute of Technology, Wright-Patterson AFB, Ohio, Jan.24.

General Ellis at AFIT:

Highlights of his presentation before new CEs at AFIT

I am anxious to take over as the leader of the Engineering and Services business. I think that we'd like to continue with some of the things that we've done well in the past, and I have new ideas of my own. I'd like to talk about three or four important areas.

What is the most important in Engineering and Services? We must prepare to go to war. That's why we're in business; it's our number one priority! Right now, I don't feel that we can get to Europe and do the job we are trained to do. We're organized in a way that is not mission-oriented and not tied directly to the flying squadron. We don't understand the relationship between command, leadership, training, and execution.

I think the toughest task one of us can have is to walk into a room and say, "Guys, they just bombed our runway, and we've got to go fix it. There is unexploded ordnance out there, so you need to be careful. Intelligence says they're coming back in about 3 hours, but we don't know exactly when. Our job is to go out there and fix the holes in the runway."

Common sense tells me that if someone approaches a group of NCOs and airmen and says "Follow me," and they've never followed him before, they won't then. We have to fix that. The only way is to train together and develop mutual confidence in each other with an understanding of the peer pressures involved in working well together in a dangerous situation. We and the security police probably will have the most dangerous, life-threatening job among Air Force people. It's going to be tough.

Today, we're organized so that during the first 14 days of the war, we come from major commands all over the United States with varying backgrounds and training. Every time a C-141 lands, we're going to have to reorganize, choose up sides, and see who the boss is; not just the boss of the whole operation, but who's going to be in charge of the carpenters, and who's going to be in charge of the plumbers. It violates a key principle of warfighting. We must be organized to fight as a unit, a team; reorganizing each day is not a good way to do this.

The bottom line is that we must be able to do our job. If we don't do our job, a bunch of planes will be sitting in hangars, and they won't be able to fly. When planes can't fly, we can't prevent the enemy from bombing our bases and runway systems. It's our Achilles heel, and we're going to fix that.

How are we going to fix it? We're going to go to war by squadron. It will mean the reorganization of squadrons throughout the world. Did you know that no flying squadron commander today knows who his base civil engineer will be when he has to go to war? If we organize by squadron — and there are about 70 of them — there will be an engineering support squadron that goes with each deployment. We need to organize our people so that the squadron commander knows who's going with him; so that the civil engineering squadron trains with the flying squadron; and, when the squadron deploys, we go too, so we can see what we'll face when we deploy as a unit in wartime.

I asked someone the other day, "Where are you going to war?" He said, "I don't know." I asked, "Why?" He said, "Because it's classified."

Somehow that seems dumb to me. We must bring resources together, and you'll be part of that. I don't know yet what size this deployment squadron will be — we're working that now. Probably we'll have two or

The Nine Commandments

Editor's Note:
In lieu of the traditional "From the Director" department, the **Quarterly** *presents the "Nine Commandments of Maj. Gen. George E. (Jud) Ellis, Director, Engineering & Services, HQ USAF." They were also presented Jan. 24, before the Base Civil Engineering Course (MGT 001), School of Civil Engineering, Air Force Institute of Technology, Wright-Patterson AFB, Ohio. While the commandments seem to single-out only the engineering officers in the audience, these principles apply to all of the people of E&S — active and reserve forces; officer and enlisted and civilian. Why nine commandments? He didn't want to upstage Moses.*

First Commandment: Thou shall be active.

Successful officers are active officers. The reserved, quiet officers are seen as being recluses. Active means doing something beyond your job. The Air Force is not a conventional 8-to-5 operation. The Air Force is a community operation. It can run up to 24 hours a day. You have special talents to help the community you live in — whether it's the on-base community, or the outside community. They need help in such things as community planning and engineering; help in doing just those things in which you find yourself interested. So, stand up and be active — pro-active. If you're so inclined, don't forget your church. You've got to be out front. You've got to be doing things. I don't think that I've seen many successful Air Force officers who are not "Type A" personalities. Guess what? Most engineers are "Type B" personalities. Step one is knowing that you've got to come out of hiding where it's comfortable. For some, it will be easy; for some, it will be very difficult. There is a myth that all people are created equal. It is a myth; God did not make us all equal. God made some of us smarter than others. He made some of us better looking. He gave some of us high squeaky voices. Recognize that inequality and work on it. Let's be active. Being active also means being quiet, uncompromising, and competitive.

Second Commandment: Thou shall stay in touch.

That means knowing what is going on around you; being a current events nut; knowing what's going on in the Air Force; and knowing what's going on in our business. It's good for you and the people who come to you. If you stay in touch, you'll be more active. It's recognizing what your world is, and not constraining that world to the drawing boards. Expand your world to include Engineering and Services business and how it fits into the wing. See how the wing fits into whatever else there is at your base, and, ultimately, how it fits into the national scene. Even though you may be a small part, know why you're doing what you're doing.

Third Commandment: Thou shall generate mistakes.

I've never seen a successful officer who didn't make mistakes. I

hesitate to use the word *make*. You can't make mistakes by doing nothing. You can generate mistakes only if you're doing something. I was at a rap session with some junior officers about a year ago and the lieutenant colonel who ran the squadron said to me, "Tell my officers why and how you expect them to make mistakes." I was kind of distressed, because I hadn't explained the subtlety of the word. I don't expect any of you to *make* mistakes. I expect you to be perfect all of the time. The difference is that when you generate a mistake, I understand two things — one is that you may not have any experience in or control over the outcome; two, I'm kind of happy about it because I know that you're doing something. Every mistake has to be a learning experience. If you put in your head that "the boss expects me to be perfect," and then you make a mistake, there is a whole different mental set than if you walk into the thing saying "the boss expects me to make mistakes." That seems to be subtle, but it's not; it's a very, very important difference in mindset.

Fourth Commandment: Thou shall have value systems.

I'm talking about things like honesty, integrity; moral values that all people need — don't lie, cheat or steal; take care of your fellow members. There is also a set of Air Force moral values: the relationship among military professionals, the relationships with and loyalty to your boss; things that are important to you as a military professional. If I gave you a test on your military value system, you probably wouldn't think of the need to decentralize authority; the importance of family; comraderie; protection of each other. You need to know, nurture, and protect these values. There will be times when your personal value systems conflict with those of your boss or Air Force. If the conflict is substantial, you have two choices, and one of them is to change your value system. I urge you to do that very carefully. The other is to find some place to work where there is a marriage between your value system and their value system.

Fifth Commandment: Thou shall know how to communicate.

I suppose that engineers do that about as badly as anybody. I'm talking about knowing how to speak, how to listen, how to understand, and how to communicate through the written word. Don't kid yourself. Make an assessment of how well you do those things. If you're lacking, you have a couple of choices. One is to work by yourself at getting better, or it may mean education — courses, classes, Toastmasters — to correct whatever your deficiency is. But, know what your deficiency is. If you want to be a failure in the Air Force, be in a position where you can't communicate. In what skill are we the most deficient? Writing. Second worst — we don't know how to listen. If we sat down and learned how to listen, we'd all learn how to understand. We're all talking when we ought to be listening. It's been one of the hardest things I have had to learn since I began to move through the system, and I'm still not as good at it as I should be. If somebody is speaking, make a conscious effort and say "I'm going to sit here, and I'm going to be quiet and listen, and I'll make my point only after I am sure what everybody wants to know." Sometimes we're preparing our rebuttal while somebody else is talking, so our mind is off someplace else, we never heard what was being said, let alone understand what was said.

Sixth Commandment: Thou shall know your job.

You need to know your job better than anybody else knows your job. Sit down and identify the parameters of your job, box them in and say, "What is it that I need to know about what I'm doing." It's your personal responsibility to learn your job and not your boss's responsibility. Your boss's responsibility is to provide three different sizes. There'll be one size to go in with a single fighter squadron; another size for dual-squadron fighter deployments; and another size for the Guard and Reserve. The Guard and Reserve E&S units already deploy together with the flying unit. Since E&S units are small, we need a squadron that will attach to itself the Guard and Reserve E&S unit. There may be a fourth squadron to go over and augment existing main operating bases, which already have E&S capability and leadership.

Making sure we will be ready to fight and win a war will be one of our main initiatives. We must prepare to go to war. We're not ready now. We're focused too much on peace. Further, I'm going to have to go with you — and, I want you to know what you're doing. If you don't, you're going to get me killed.

We must not delay in this area. Getting it done this year is about as fast as we can do it. I have a "Tiger Team" in the field now. I've given them some hard guidelines. First, I told them to identify the right size. Size for what? As engineers, we get enamored with numbers. Three or four engineers go to a base where we will deploy, and with great aplomb, say "this place is going to need these facilities and these sorts of things." If we are 60-70 percent correct in that assessment, I'm happy. But, then these guys return with data to a headquarters and another four or five captains build a computer model. They throw in their data and the computer says "I need 14,764 carpenters and, don't challenge that number!" Of course being so finite gets in our way. I don't know how we're going to be able to predict exactly what we're going to need in a war environment, but I do want to ensure the right mindset. I don't care if we have 15, or 18 or 12 carpenters. I'm going to make do with what I have. I'm not going to get so precise or bogged down in analysis, with a study so complex, that by the time I get done with it, I may only find out that I was not prepared for the war in the first place.

We must get to the war to win it and we must have our equipment: mo-bag, A, B and C, sleeping bag, tent pad, rifle, ammunition — tracers, grenades — when we get there. I was distressed the other day when somebody asked me if it was all right if Services folks went to war without weapons. Wrong mindset! Who wants to go to war without weapons? Now they'll have their weapons. And,

they've got to get the right transportation to a place like McGuire so they can get to Ramstein, Rhein-Main, or wherever they are needed. Right now I would consider a deployment a success if they found the nearest bus station. We need new leadership to get us where we're needed.

Again it is a matter of mindset-focus. If I'm going to move a whole E&S squadron with its deploying unit, the fighter squardon commander will understand that the E&S team is important to the conduct of the mission in Europe or Asia, so you bet we will get there. We will get there as a team; one that is properly led; and with no strangers.

I think how we go to war is very important. I have places where the fire department arrives 13 days after the airplanes. There will be some mad pilots, particularly if one comes in with his tail on fire. We can and must fix these things. I expect the squadron organization to be defined by the end of this year.

The second area I want to emphasize is decentralization. This runs the gamut of distribution of responsibility, authority and accountability, all the way down through training, teaching, and learning. Once you understand that you have the responsibility, authority, and accountability, you have to know what you are doing. The only way you get that kind of knowledge is through experience, training, and education. For too long, we have brought every decision up as high as we can. As a result, you may be a major, lieutenant colonel or colonel before you are given the opportunity to make responsible decisions. We need to decentralize decision making.

When you're responsible, you're going to be more productive and innovative. Centralization is the most dehumanizing feature of an organization that I can think of — where everybody's responsible, so nobody is responsible. A bad part is that the strong carry the weak but you can't find the weak to make them stronger. The stronger get tired of carrying the weak and then you level off at mediocrity. If you go in there and try to find where the problems are, you can't.

I want to be able to put my finger on responsibility. No one in our business should be anonymous. We have to wear the mantle of responsibility and accountability. Some folks don't want to do that. They don't like making decisions and being accountable, yet the resources necessary to help you learn your job and you may have to ask for it. But, not knowing your job is a terrible, terrible mistake. You have to be honest with yourself about how much you know about your job. Accept that. Try to describe the things that you think you ought to know. Then go out and learn the things that you don't know.

Seventh Commandment: Know your boss's job.

Why? How can you set priorities in your job, in the things that you do, if you don't know what's important to your boss? How do you learn the boss's job? You don't need to be a pest; but, you can watch him. Learn what his priorities are, find out what's giving him trouble, and when you set your priorities make sure that they are supportive of your boss's priorities. Don't go marching into his office and say, "Boss, tell me what your priorities are." That's probably exactly the wrong thing to do. You want to be subtle; you want to understand. Understanding causes the whole organization to mesh, it is the fertilization of what we do. Why do you need to know your boss's job? Because that's the best way to learn what he wants of you.

Eighth Commandment: Thou shall make your boss's job easier.

If you do that, I guarantee success. You can't do that unless you know what will make it easier. You need to know what's bothering him, and where he needs help. Don't walk into him and say, "Boss, I'm here to help you." He's too busy. Just do it. If you walk in and say, "Boss, what is it that I can do for you today to make your job easier?" he'd probably faint; and you might have to give him mouth-to-mouth resuscitation. There's a real danger there, but, chances are, he can't tell you; he can't articulate very clearly what it is that you can do today to make his job easier. If you watch sensitively, probing, you know what'll make his job easier. So, when you set your priorities, what you're going to do today, make sure that those things make your boss's job easier.

Ninth Commandment: Thou shall have fun.

There is nothing inconsistent about working hard and having fun; together, they're a consistent notion. In fact, I argue that if you're not having fun, you're not as productive or as innovative as you can be, and you're a drain on the organization as a resource; you're not a part of the organization. Most of us know how to have fun. If you can't have fun in the United States Air Force, you'd better go find something else to do, because, we do have fun. It doesn't mean parties and that sort of stuff. It is an ambiance. You could have made this school fun if you had worked at it. I remember when we were at the schoolhouse we used to go down to the Embers, which turned out to be the Crystal Pistol, which is no longer there. Many, many hours were spent there, doing at the Crystal Pistol what we did in the classroom, over a big table full of beer. It loosened things up, and we had fun. We worked there! We even won a dance contest down there. There is always consistency between working hard and playing hard.

I feel strongly about these commandments. I think that you ought to take the parts you are comfortable with and work at them. Those that you are not comfortable with, I'll ask you to reassess, and look at, and provide your own mental framework on what's good and bad. Then, I want you to go out to your bases and become part of the teams. I don't want you to sit on the bench. Nobody ever has any fun sitting on the bench. You need to be a player; and to work at being a player. How do you get off the bench and onto the floor? You do it with work, practice, and attitude. If you're on the bench, work your way off. We'll give you all kinds of opportunities to do that.

we must be. You have to be prepared to answer for something you do incorrectly and be rewarded when you do well. What piece of paper do you work on first? You work on the one that will get you in trouble if you don't complete it. If it doesn't need to be done, then you'll probably procrastinate. That's human nature. If you don't feel that you have to do it, because you're not going to be blamed if it doesn't get done, or rewarded if it does, you're going to find all kinds of reasons not to do it. If it's yours, and everybody else knows that it is your say, your whole perception of what needs to be done changes. That's what decentralization is about. It's going to make us better persons, better organizers, and better and more productive leaders. What's more, it's going to be more fun. You may not believe that, but it will be. Nobody hides anymore.

We had to tear down a building once because of a design mistake. If we didn't tear it down, it was going to fall down. We figured out that it wouldn't stand up and asked, "Who's responsible?" Even for a decision that was that crucial and costly to the United States taxpayer, I couldn't find a person responsible. That's not the worst part of it. If the person responsible for that structural analysis knew that if the building fell down he was going to be punched in the belly, it never would have happened in the first place.

The third area we're going to focus on is WIMS (Work Information Management System). At 4 o'clock this afternoon, we announced the winner of the contract to furnish a new minicomputer — we've been working the acquisition for 3 years. It's going to change the way we do business — not in just the ways we are planning. It will permit us to be able to innovate, to both control and decentralize, and to communicate. It will let us make commitments to people; our own co-workers, and our customers; because, for the first time, we're going to display commitments so that everybody can see them.

The winning company, Wang Laboratories, has to be able to deliver up to 100 systems a month. Up to 1,600 systems are being bought with Air Force funds, with about 260 of these for E&S. The combination of funding cutbacks and the cost savings realized through heated competition on this contract has positioned us to buy full automation for each of our functional areas. We're looking at about 100 computer terminals in an engineering squadron and 40 in a Services squadron. This is an investment in doing our business better.

And, we're going to do it right. The business of running E&S — when you look at it across the spectrum — is about a $4 billion enterprise. In addition to this, we have over $13 billion either under design or under construction today. That's about 3,600 projects. That doesn't count NAF, O&M, (which is another $600-700 million), and it doesn't count the whole base-level operations and maintenance. We're big business and we're leading the way by buying something just a little bit more expensive than a typewriter to do our business.

And, the systems are *user-productive*. That's better than user-friendly. The system draws you in. They're so user-productive, and so unconstrained — and I insist on it being unconstrained — that you can do whatever you need to make your job better. We are going to give you some reports initially, but others you can create yourself after a few days training. There are some restrictions on the data base — data base elements that have to move between bases and major commands. But, that's all. We're not going to move reports. And, the data base is available for anybody who wants to use it. There is a lot of philosophy associated with this that's important. It's free for you to use; it's yours for your benefit to help you do your job.

I think that before we're done with it, it will impact the way that we do our business as much as anything that we've ever done. Now, 3 years after I put the first system on, I still remember how the computer community got upset with us. We aren't limited to depending on the traditional COBOL-FORTRAN programmer any more. And that requires big changes in the computer business as we know it today. At TAC headquarters, we put 600 reports on in 6 months, using just E&S personnel. We went through a kabuki dance just to get to operate our own in-house computer. I think that Colonel Nay talked to you earlier about *nay-sayers*. In E&S we may be nay-sayers, and we should be careful about that, but we aren't the worst. There are all kinds saying, "Nay." Want to buy a radio? The nay-sayers will tell you why you can't. Want to buy a computer? There must be 15 levels of these fellows. When we first went to them for our HQ TAC system in 1980, they said, "Tell us what reports you want so we can prepare to write them for you." And, I said "I'm not interested in having you write programs for me." Then they said, "No. You've got to do that." So, we defined the first 100 reports that we wanted to do and took these over to them. They came back and said, "Tough job — 21.5 man-years of effort." After we finally got our own system, we put 300 reports on in just 60 days.

For you folks who like to read, there's a book out by James Martin, called *The Information System Manifesto*. The first four chapters and the last chapter are worth reading. If you're computer nuts, the middle chapters are also worth reading. I think that I like the book because he agrees with me. It's easy to read and talks about the revolution that we've been going through. We are leaders in this area and not just in the Air Force. The SC community — the communications and the computer folks — still don't know whether or not they're giving away the farm and the outhouse by allowing us our own computers. But, we are demonstrating everyday that we know what we are doing. I don't feel sorry for that, even if they do feel like they're losing control. Remember decentralization? When we make our people responsible, even for their own computer tool, we will benefit on all levels.

We ran an interesting experiment some time ago on job orders. You may know that many bases are hundreds of job orders behind. But, they think they're doing OK because they are not visibly responsible. At Duluth — before it closed a few years ago — we tried an experiment. Whenever a job order came out of a service call, a shop was given responsibility for getting it done. Sounds familiar? Here's the difference. We put a board in a high traffic area and we displayed — for everyone to see — whose shop was doing the job orders that they'd been assigned. We started out with a wall and a half full of work. In 6 weeks, we didn't need a board anymore. There was not one job foreman who wanted everybody else to know that he missed a commitment.

That same philosophy will apply when we implement WIMS. You can't do what we did at Duluth at a big base, because when you get 3,000 job orders a month they're too hard to track. And, because they're hard to track they sometimes don't get done or they get "lost."

When I'm out on the road, I like to go look at the hoppers where you put

the job orders. Have you ever watched the foreman come in and pick through and choose the ones he wants to do? The ones that nobody wants to do get old and musty; and while we get around to doing some of those job orders, we forget that each one represents a customer. It's a shame.

Then, if you go to one of the shops, look in the second drawer, left side, and pull it open you'll find old job orders. I've won more bets by picking the second drawer left side. WIMS will change the way we do business, but not the way computers often do. We are going to automate the way we do business today, then we are going to get involved in new and better ways to use the computer. There will be some organizational turmoil just installing the hardware. My guess is that when we get done, we will manage much better and we will have laid a foundation for our future (career) as well.

The fourth area we need to talk a little about is your career. It's going to be real tough to be a success in the Air Force; as difficult a challenge as you can strap on. About half of you will leave the Air Force when your commitment is up. It's a double-edged sword. Some of you ought to leave us. Some will find this way of life not a perfect match with your value system. About 50 percent of you who stay will make colonel. The chances are that none of you will make general officer. When I started 25 years ago, making lieutenant colonel was good. I guess that today making colonel is a measure of success. But, increasingly, I find more and more of my colonels wanting to make general officer. Today, of 95,000 officers, there are only 343 general officers. I checked the last brigadier general's list, and over 90 percent of them had either a master's degree or a doctor's degree. In 20 years from now, many of you will be colonels and you will start to compete for general officer. Don't be afraid of that challenge. Recognize what it is. Prepare for it. Because, someone has to be a general. Why shouldn't it be one of you? Don't hesitate, but know up front that the challenge is formidable.

Let me make a few comments about the diversity of our background — men, and women; electricals, mechanicals, civils, architects; academy graduates, OTS, and AFROTC. This diversity gives us character, a breadth and depth of thought. We engineers — more so than our Services people — are a very stoic group. We like and feel comfortable with one *right* answer. We tend to be recluses. We don't laugh enough. We don't cry enough. But, we're comfortable with that. We became engineers because our basic disposition is that way. If you want to look at the records, we're smarter than most, but we can improve ourselves by broadening our perspective: male/female points of view; even architect's points of view.

How many architects in here? Well, you'll catch it. If the engineers try to give it to you, don't take it from them. They say that an architect is an engineer who flunked calculus. That's not true. Some of our most creative people — including my retiring boss — are architects. I got my commission out of West Point, and my college education from Arizona State and George Washington. I moved from the engineering to the management side of the business because I didn't want to take a chance at flunking calculus a second time. It was hard enough trying to get through it the first time.

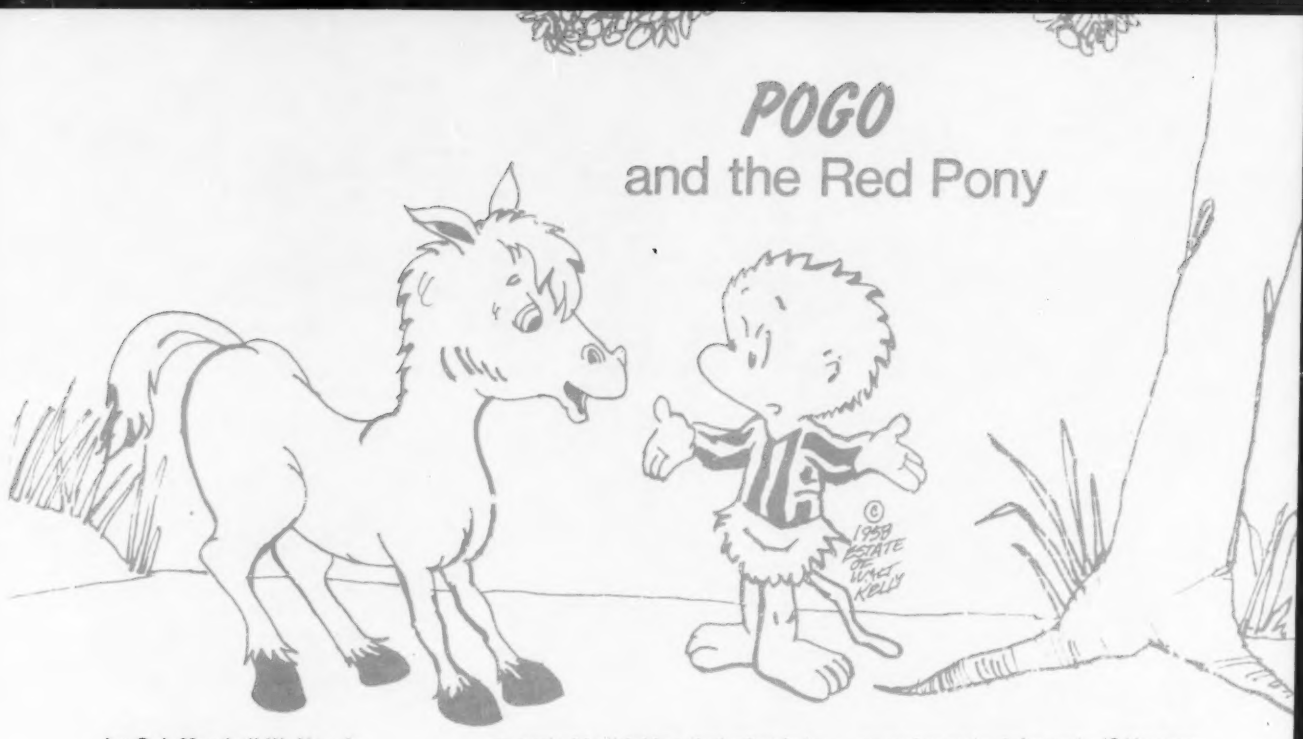
We're pretty good at what we do. I can't think of a better, more noble profession than defending this country. The best part of being in the Air Force is that we do our jobs well; we're the most professional people in the world! In spite of what you may read in the papers about mismanagement, believe me it's not that bad. We are good. I'll stack us up against any commercial business in the United States. From the standpoints of productivity, innovation, and commitment, we would win hands down. My motivation, I guess, is trying to make something good even better, and we have to do it while living in a "glass house."

How good are we? When General Creech was commander of Tactical Air Command he called me up and said: "We're going to go to Egypt with some F-4s, and we're going to learn to do our mission right alongside the Egyptians — we're going next week." As soon as the word got out of my office, I had volunteers wanting to go. It made me feel good. I didn't have to tell anybody on my team that they had to go; I had the volunteers. When Colonel Khadafy was working over Chad pretty hard, we sent over some F-15s on a moment's notice. The E&S team went in first and prepared the place for the fighters and for AWACS and we did a helluva job. Remember, Khadafy said he was going to shoot down one of our AWACs birds — the F-15 jocks wanted him to try. Such things as "Navy 2 - Khadafy 0" are important. Even though sometimes the public has problems with these sorts of things, we know how to do it right. *(In the weeks since the AFIT address, the Navy conducted additional excercises in the Gulf of Sidra and responded to hostile action; and the Air Force and the Navy conducted joint raids against terrorist activity hubs in Libya.)*

There are two good parts of knowing how to do it right — you can be proud that you know what you're doing; and they know you know what you're doing, and they're not going to take us on. Never apologize for what you are. It's a noble mission with enough challenge out there to separate the men and women from the boys and girls. We're going to give you that challenge early. In fact, we are so light in middle management — and I'm talking about the senior captain and major levels — that junior lieutenants take on much more responsibility than we would normally be able to give them. The responsibility and authority levels go up very quickly. It means knowing what you're doing; caring about what you're doing; being a part of an accelerated process. I find that on the whole, E&S lieutenants are handling this challenge very well.

Lt. Mark E. Powell, 6550th CES, Patrick AFB, Fla., receives SAME's Award of Merit as the top student in Mgt. 001.

POGO and the Red Pony



by Col. Marshall W. Nay Jr.

From the relative safety of the dean's office here at AFIT, just far enough removed from the day-to-day mainstream of our base civil engineering business, I now see us in a very different perspective than before. I had served a couple of back-to-back assignments as a BCE before I assumed this duty and it seems I suffered from a bad case of "tunnel vision."

As a BCE, I worked for many combat support group and wing commanders (installation commanders). These dynamic officers shared a dedication to excellence with a corollary high level of expectation from the civil engineering squadrons.

I still maintain close lines of communication with installation commanders through presentations in our AFIT Commanders Engineering and Services course (SOCE, MGT 002) and Air University's Leadership and Management Development Center's Commander's Management course (LMDC 810). You would expect to meet a *few* commanders who have a jaundiced view of Air Force civil engineering. There may be a concensus.

This article is a continuation of the dialogue on the image and perception of you and me as a career field group, as seen by the general base populations and our bosses, those installation commanders. You are probably thinking that what is to follow in this article does not apply to you. However, you may know someone to whom this information does — so please keep reading and tell them about it later.

An appropriate line came from a once well-known comic strip Pogo, "We have met the enemy and he is us..." From what I am hearing, I think you and I are part of our own enemies, because installation commanders think we are a bunch of "naysayers," those who , when confronted with a proposal or a new idea, respond by saying *why it cannot be done*. We have a repertoire of great responses:

- We are out of money or manhours;
- It will take to long to get the materials;
- It is not in the program;
- It exceeds our approval authority; or,
- It violates a regulation or public law.

These are valid reasons; so perhaps we need to reassess how we market ourselves to the boss and our customers.

Here are some concerns installation commanders have about us. Here they are:

- We do not honor commitments;
- We can not tell them when a job will be finished and then make it happen.

Has our organization become so complex as to defy control? Have we contracted out so much that lines of authority and responsibility have diverged? Or, are we weak leaders and managers of people? I do not think that there is one single answer; but, you should evaluate your own situation now.

MCP

I also continue to hear that the MCP cycle is too long and lacks an audit trail to a responsible office. If you have ever tried to explain the cycle one-on-one with your installation commander, no doubt you are aware of this. A part of the problem is the short tenure an installation commander enjoys and the associated problem with pride in authorship. Do not give up though. Keep talking on a streamlined approach. Tie your pitch to a POM submission, the Air Force Board Structure, and PPBS. A successful MCP is a team effort. Above all, make sure the installation commander knows early on what's in the past POM submissions and why.

The Classification Standards

Our work classification rules are confusing. What was repair one year is minor construction the next. You need to be sensitive to this, and if its a real problem, ask your MAJCOM/DE for help.

Personal Standards

I hear that you and I do not enforce Air Force personal standards such as

haircuts, uniform appearance, weight, and physical fitness. They are correct.(I can think of some excuses but they are shallow.) Often our military workers are supervised by civilians who may not be sufficiently sensitive to these stringent standards. If this is your situation, communicate with your civilian supervisiors and get your first sergeant out of the office. We could use the excuse that if you went to the other industrial work centers you would find the same problem. The exception being that they are shielded from public view by working in restricted areas. Our people serve the entire base population and are constantly under their scrutiny.

A Success Story

Security police enjoy the greatest exposure on base. In five years they have greatly improved their image. The Peacekeepers drive clean, distinct vehicles; wear special uniform accouterments; and communicate with people quite ably. As a result, they enjoy a very high level of respect within the Air Force today. I am not suggesting we issue ascots to our plumbers, but we can learn some valuable lessons.

Responsiveness

We can:

- Improve change-of-occupancy cleaning in housing;
- Brighten up the "dumb" SMART team;
- Stop telling the installation commanders that their work is "in planning;" and
- Retire the "look and leave" team. The message is, "stop the CE shuffle!"

Communication

I now want to venture into a sensitive area. For whom does the BCE work? I ask installation commanders and I get some very candid insights into the hierarchies: "*Who does your BCE work for?*

a. Wing Commander
b. Base Commander (Combat Support Group Commander)
c. MAJCOM/DE
d. Him/herself
e. Entire base population
f. All the above

The correct answer is that the base commander writes your OER and you take your daily instructions from him or her. *Both* of you work for the wing commander with a commonality of purpose and serve the entire base population. The MAJCOM/DE is available to advise and assist you and sincerely wants you to be successful.

But in your own lines of communication and informal chain of command you may find that you routinely deal with "a," "b," and "c," above — a triad. If you are such a BCE, carefully examine your communications net and be forward enough to discuss it with all parties involved. Ensure that everyone is communicating with each other. And, each time a member of the triad changes, so do the lines of communication. Every time I visit a good squadron, I note their lines of communications are well defined. Do not take for granted communication with the boss and other senior people. Examine your lines of communication and make them better.

A Profile

I have become a student of installation commanders. Here is a generic profile of the many dozens I have met:

- A male, fast-burner pilot who has a variety of important base-level CONUS and overseas flying assignments and one tour in the Pentagon;
- An overachiever who has a master's degree in management and is a senior service school graduate;
- He is in the top two percent of the officer corps and definitely has the potential to be a general officer;
- His tour as the installation commander offers that one chance;
- His expected tenure is only 18 to 24 months, so he has much do do.

What else?

- He has limited experience/exposure to the services and support arena, so he will want to spend as much time with you; and
- With the emphasis on quality of life and base appearance, your performance is very important to him.

Make sure he is well known by your squadron people. Invite him to your Commander's Calls. Take him around to your work centers, post his biographic sketch and photo on all your work center bulletin boards.

Does the installation commander have priorities? Here is a generic top five list:

Priority List	Description
1	Flying safety
2	Pass nuclear surety inspection
3	Execute the flying hour program
4	Enhance quality of life
5	Improve base appearance

In the interest of time, I will not expand on these. You can easily see how important your civil engineering squadron is to these. Discuss these with your installation commander and get your own inputs, then support him to the hilt and ensure your people are totally familiar with his priorities.

Support

Let us examine how we can direct our work force to really support the installation commander.

Start with service calls and job orders. These are our bread and butter. If we do not do these right, no one will have confidence in us. I think we are too hung up with AFR 85-1. Do yourself a favor and do not read it for 30 days. Have your secretary hide it for a while. Forget about "emergency, urgent, and routine." Those are our classifications — not those of the installation commander. Instead, analyze your job orders by functional work center. That will tell you much about your operation. Consider how many are: roof leaks; faulted electrics (to include alarm systems); inoperative plumbing; broken doors, windows, and associated hardware; inoperative HVAC; and damaged signs. When you see where your problems are, adjust your resources accordingly and get after the work. Suddenly, you will be more effective and the entire perception of your squadron will change for the better.

How about "R-R?" Can you respond in a timely manner? I am not talking about rest and relaxation, but instead "rapid rehab." Today this is similiar to painting the exteriors of buildings earthtone colors 5 or 6 years ago. Recognize this. Tell your commander it will take you 12 to 18 months because the backlog of your open-end and A-E firm, etc. Develop the ability to respond quickly and maybe even in-house. Let your shops do some of the work where they can really take some pride in craftsmanship. (But remember—you're not commanding a Red HORSE squadron.)

The Red Pony

So, why not consider a concept such as the "Red Pony." Really not something new, I understand it has been used by at least one of our BCEs. Let me explain the concept. We have a two-to-three person, multi-skilled military select team, SrA.-SSgt., with 5-level skills. They are available for immediate response, and are screened to be on the team for a limited period of time (120-179 days). Reward can be tangible and intangible. APRs indorsed by the installation commander, and periodically an Air Force Achievement Medal, for that really top performer, are both tangible career benefits. Don't overlook the benefits of intangible reward — local peer group and basewide recognition. You and I will really benefit because our young NCOs will be multiskilled, and thus better prepared for their wartime fighting role; and will benefit from being supervisors, working "under fire." In addition, we will have completed many small, but important, projects for your customers and the installation commander.

Is it that good of an idea? Or, are there pitfalls associated with it? The answer to both questions is, "Yes." There are absolutely pitfalls associated with it. First, why not convert the entire squadron to a "Red Pony?" To do this, of course, would cause us to forsake the IWP, especially recurring work, and invite general anarchy, and loss of the capabilities of the real property infrastructure. Installation commanders should understand this. A more serious problem could be material accountability, when, in support of *timeliness*, material is *borrowed* from work orders. Be sure your accounting system can handle this. By far the biggest liability is the "Blue Pony," the mass of blue suiters who will provide unauthorized self-help work. You must be steadfast and counter this. If you do it right, you have started a winner.

Most of us today have difficulty marketing ourselves. Few civil engineering squadrons have actively planned public relations programs. As I travel around our Air Force and look at the base newspapers, I have observed that about half the topics in the *Hotline*, *Helpline*, and *Answerman* columns are civil-engineering related. Moreover, when I read them, the sense of frustration the author releases over the "CE shuffle" does not escape me. So, I have discovered that you and I indirectly have a weekly base newspaper column that we only get actively involved with when it comes time to answer a complaint. If I had the opportunity to be a BCE again, I would ask the installation commander and the public affairs officer for my own weekly column. (I may not get it, because competition for newspaper space causes PAs to be spare in allowing functional columns on some installations.) If I were successful, in it I would attempt to tell the entire base population what of significance my squadron did for them last week and what we are going to do this week. Information on planned utility outages, road closures, etc., could be announced with reasons *why*. In addition, top CE performers could be recognized for what they did for the newspaper readership — the base population; and, what they did for the Air Force — supporting the base mission. I understand at least one of our BCEs is doing this now, and I have to believe he is more successful because of it. Please consider the appropriateness of this idea for your base. It could really bolster the positive perception of your squadron among your base population.

Success, as we have defined it here, boils down to good leadership on your part. Of all the roles you play — technician, manager, and leader — the latter is the most important. As engineers, we get too enamored with being technicians, too engrossed with management, and overlook the latter. In addition, if we have introvertive tendencies, which I sense many engineers have, this also works against us.

We must confront our customers over their requirements and really analyze their needs. Why not adopt this slogan: "The customer knows what he wants, but the BCE knows what he needs." Be careful with this or be prepared to be branded a cynic. Analyze the user needs, look at the resources and constraints you have, then make the customer a counteroffer. If he or she accepts, make a commitment to deliver your alternative proposal and then execute it to the best of your ability. If you can do this, you will be successful.

Successful leaders today must motivate a wide variety of people, having diverse skills, to execute a number of important tasks. In the Air Force, I do not believe you will find a more complex organization than a civil engineering squadron. There are more different categories of people and specialty codes than most other squadrons. It has many characteristics of a mob. Is there any wonder our Operations branch often is referred to as an "adventure land" because of this complexity. Take a close look at the people in your squadron. Do not take for granted that their basic physiological and safety needs are being satisfied; ensure yourself that they are. More important, is there a path that will lead them to the top of the pyramid where they can achieve self-realization, or did they fall off during the attempted climb a long time ago? Take the time to ensure all your people have a chance to look forward to something better in the future and achieve their professional goals. Supervisor/subordinate career counseling, good organizational communications, and a solid understanding of the military/civilian personnel systems, so each can trust and respect one another, will pay you dividends many times over.★

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CESMET tips

Tool Management — One of the few areas within civil engineering where "too much" may be detrimental to its effectiveness is the management of tools within the Logistics Management function. Here we make the distinction between tools to buildup shop tool boxes and the replacement of tools used in your day-to-day operation. The latter is the one we are all concerned about. We see some units trying to manage from 500-700 line items. This is far too many!

CESMET suggests that if you have to stock tools, then select only 25-50 fast-moving, highly-breakable items and stock those. Let the tool issue center manage your other requirements. They have the resources — money (stock fund), personnel, storage facilities. You don't! Bottom line: Try and get out of the tool issue center business.*

Appliance Management — Appliance managers are now authorized to establish and maintain a backup stock of appliances not to exceed 6 percent of the total less RPIE and EAID authorized assets.*

Shop Stock — CESMET continues to find units that have large shop stocks with between 1,200-1,500 line items with levels of 100 each on many items. Shops must have material necessary to do their job. CESMET questions such large amounts. You and your shop chiefs should take a hard look at your shop stocks to determine if the large quantities are actually needed. Remember, you lose visibility and commonality of these items and tie up large amounts of your O&M dollars on items which may or may not move in the short term. Many overstocked bases have had funding problems which "throttle back" on their spend rate, severely restricting their supply pipeline. This hurts everyone and it takes a long time to recover. Think about how you are managing your shop stocks. Is it really in the best interest of the base? This may be one of those times when "smaller may be better." Reference TA 414, Mar. 2, 1985, D(2).*

FAD Codes — Prior to placing your requisition with Supply, make absolutely sure your requisitioning clerks are using the correct Force Activity Designator (FAD) code. If the unit you are supporting has a FAD Code 2 or 3, then use it! While some Logistics chiefs seem to feel this is priority abuse, it isn't! The Standard Base Supply System allows customers to use the FAD codes of the organization being supported. FAD codes, plus the Urgency-of-need Justification Codes (UJC), work hand-in-hand to give us the highest possible priority requisitioning code. If your unit fails to use the correct FAD, then the requisitions for your organization will be low. CESMET recommends Logistics chiefs brief planners, PCC, and shop personnel on the correct use of FAD codes and an improvement in overall support.* *(HQ AFESC/DET, Lt. Col. Wyatt, AUTOVON 970-6111)

Production Control and Logistics — We have seen several good job order management programs in the past year. Good programs have in common a good monthly reconciliation of open job orders. This action ensures the management is tracking and emphasizing work that still needs to be done. It prevents wasted effort on jobs that have already been done. A good reconciliation will include four actions.

- Compare material complete job orders held in the Logistics Management warehouse to the open job order log (AF 637). Transfer materials to residue for those jobs that are closed in the log.
- Compare material-on-order job orders held in Logistics Management to the open job order log (AF 637). If you can, cancel due-outs for job orders already closed out. Otherwise, transfer the due-out to the residual work order and have the materials delivered directly to your residual warehouse when they come in.
- Compare "material-complete" job orders backlogged awaiting manhours in the shop(s) to the material-complete job orders held in Logistics. If the bill of materials is not really complete, change the status to "awaiting materials" and be sure the parts are on order.
- Compare material-on-order job orders backlogged awaiting material in Production Control to the job orders being worked by Logistics. Make sure materials are really on order to support these jobs.

Remember to do all four comparisons. Concentrate on the jobs we still need done. (HQ USAF/LEET, Maj. Earls, AUTOVON 297-4264)

by N. L. (Norm) Fowler and SMSgt. Chris Kendrick

Airfield lighting systems must be flexible, reliable, maintainable, and feature ease of operation. They are critical to the mission success of the airbase on which they are installed, and the operations and maintenance of the system are major expense elements on most installations. Most systems now in use were designed and installed years ago. A key question is whether or not to continue making the old system work, or reevaluating the system, using tougher reliability and maintainability criteria. Quite often, this reevaluation results in major reengineering or even replacement of the system.

This article deals with the installation of a new system at a complex installation. How do you determine whether or not to proceed with reevaluation and reengineering at your installation? In the adjacent figure are 10 questions. If you cannot answer "yes" to at least six of them, then your airfield lighting system is probably out-dated and in need of an upgrade. Robins AFB, Ga., is fortunate to be able to answer "yes" to all 10 questions. In fact, Robins has been so successful in modernizing its entire airfield lighting system, that it is being compared favorably to the Dallas-Ft. Worth system, which is considered the industry's showcase.

One of the most striking elements of Robins' new system is the airfield lighting vault. This new vault stands in stark contrast to the old vault and to Air Force airfield lighting vaults in general. Robins' old vault was located in the basement of a maintenance building and contained very little space in which to do maintenance on

A Showcase Airfield Lighting System

1. Does your base have a frangible approach lighting system?
2. Can you start and run the airfield lighting generator from the control tower?
3. Is the current regulator input voltage in your airfield lighting vault 480v, instead of 4,160v?
4. Do you have a crane installed in your vault to move heavy equipment?
5. Do you have adequate room in your vault for easy maintenance?
6. Has your vault been made safer by eliminating all exposed, live conductors?
7. Are your regulators state of the art, with modular electronic controls?
8. Are your runway and taxiway lights quartz instead of incandescent?
9. Are your airfield lighting fixtures state-of-the-art, with plastic frangible fittings?
10. Are your critical airfield lighting circuits wired in a "leap frog" manner (i.e., every other light on one of two different circuits)?

the old, outmoded airfield lighting equipment. It utilized 4,160v with an open bus arrangement.

When designing the new vault, the decision was made to break tradition and construct it as close to the control tower as possible to reduce the length of lighting control cable. (This may not be practical overseas.) The old control cable was about 3,000' long and was a major maintenance problem. By locating the new vault near the control tower, the control cabling was reduced to a couple of hundred feet, which should greatly reduce control cable maintenance. Communication was improved because this small distance allowed the easy installation of a telephone hotline between vault and tower. The move also enabled the control tower generator to be eliminated by sizing the new airfield lighting generator to serve both the tower and the airfield lights. A very important added feature was the capability of the tower to start and run the new generator, thereby giving the controller more direct control of the airfield.

The new vault itself is designed and constructed for maximum maintainability. The regulators are evenly spaced in an open bay with plenty of space on all sides for easy maintenance access. There is no exposed live wiring to present a safety hazard. A 480v system was selected when an engineering analysis showed that 480v is superior to the standard 4,160v system, because of increased safety, lower initial cost, decreased floor space requirements, and the greater availability of 480v equipment. The 480v is distributed by an overhead bus duct, which is easy to maintain and requires no floor space. The airfield regulators are fed directly from the overhead bus duct. The regulators are state of the art with modular electronic controls and built-in ammeters. To control all of this, the design A&E utilized a computer-designed relay control panel with a simplified, logical wiring pattern.

One of the most unusual (and useful) features of the vault is the overhead crane. It enables maintenance on the very heavy regulators to be performed easily, quickly, and safely. Since maintenance downtime is reduced, the crane increases the reliability of the lighting system and will save many manhours. It is a very valuable innovation which, hopefully, will be designed into all future Air Force airfield lighting vaults.

New and old lights are contrasted.

Major improvements were also made to the lighting system outside the vault. Among the more visible portions of this system are the approach lighting towers. Fortunately for Robins, compliance with the FAA regulation mandating frangible support towers also eliminated the unsightly, wooden poles which had been used as supporting structures. The new, frangible fiberglass structures are not only more aesthetically pleasing, but have lower maintenance requirements.

While aesthetics are not as important for the other airfield lights (runway edge, threshold, etc.), maintenance was, because their sheer numbers accounted for the bulk of the maintenance manhours. Here again, Robins was able to take advantage of the state of the art to reduce maintenance and improve reliability. All fixtures were replaced with modern fixtures, using the new, frangible plastic fittings as appropriate. These plastic frangible fittings are vastly superior to the old-style metal frangible fittings, which sometimes had to be chisled out after being broken. All fixtures also used the new quartz-light bulbs, instead of incandescent. The advantage of quartz bulbs is that they are physically smaller, last longer, and

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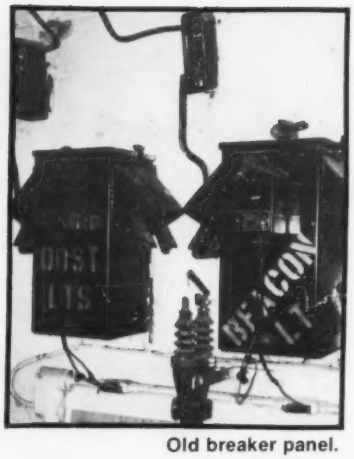
SMSgt. Chris M. Kendrick is the electrical superintendent at the 487th CES Comiso AB, Italy. He was previously assigned as a force development manager, Readiness Directorate, HQ AFESC, where he worked extensively with BARE BASE utility systems upgrade, including the portable airfield lighting system (PALS). He earned an associate degree in Electric Power Systems from CCAF. He is a member of the Society of American Military Engineers.

are more efficient. The new 175-watt quartz runway edge lights actually give more light and use less energy than the old-style 204-watt incandescent.

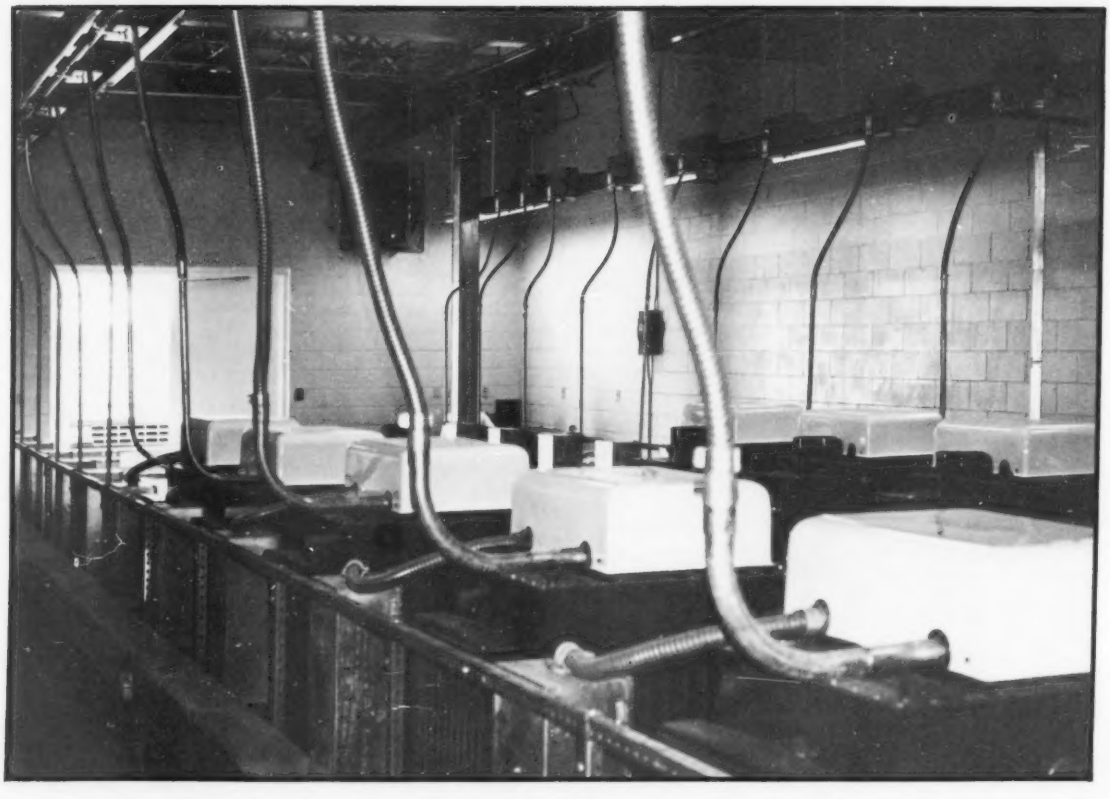
When the power cable to the airfield lights was replaced, it was installed in plastic duct, as required by AFM 88-14. However, instead of replacing it so that one of two circuits fed each end of the runway edge lights, it was installed in a "leap frog" manner. "Leap frogging" is a term used to describe wiring the lights so that every other light is fed from one of two separate circuits to ensure that the entire runway will remain lighted (although at an increased lighting spacing) should one circuit fail. Even though "leap frogging" increases the lengths of the circuits, the increased reliability is well worth the extra copper.

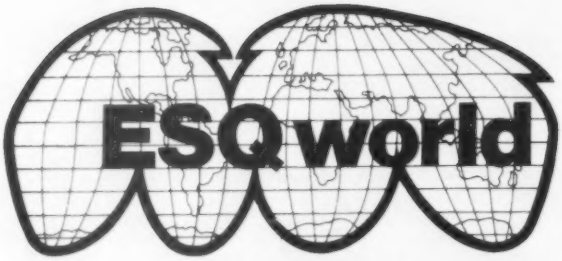
Base Civil Engineering at Robins AFB is able to answer "yes" to all 10 questions listed on the chart for three reasons. First, they adopted a systems approach; they completely defined the deficiencies of their entire system and then researched FAA advisory circulars and manufacturer's catalogs for the most modern equipment available to correct the deficiencies. They also worked closely with the Utilities branch of the Engineering Division at HQ USAF to obtain any waivers necessary to implement their selections. Second, they were careful to select an A&E firm with considerable experience in airfield lighting. Last, the foreman of the exterior electrical shop had one of the airfield lighting personnel assist the contract monitor. This person's knowledge of the airfield was very beneficial in obtaining a quality product. One other important aspect was that all parties involved worked closely with each other. The efforts of all BCE personnel involved are to be applauded for making the airfield lighting system at Robins the "showcase" of the Air Force. ★



Old breaker panel.

New lighting vault at Robins AFB.





People, Places, and Events of Interest

Nellis, Hickam Win '86 Hennessy Awards

MSgt. James Denney

Tactical Air Command and Pacific Air Forces bases are the 30th anniversary winners of the Hennessy Awards for the best dining facilities in the Air Force; and an Air Force Reserve unit received a special award.

Nellis AFB, Nev. (TAC), won among bases having multiple facilities. Hickam AFB, Hawaii (PACAF), won among bases with single facilities.

Special award winner was the 94th Combat Support Group's food service facility at Dobbins AFB, Ga. (AFRES).

Sembach AB, Germany, U.S. Air Forces in Europe, was runner-up to Nellis, while the Air Force Academy, Colo., was second to Hickam.

This is the first win for Nellis and Hickam. Sembach has been runner-up once before. The Air Force Academy has won twice, and earned runner-up five other times.

In announcing the awards, Air Force Chief of Staff, Gen. Charles A. Gabriel, said, "I am proud of the excellent food service the Air Force offers around the world, day after day, and the Hennessy trophy recipients are the best of the best."

Awards will be presented during the National Restaurant Association's (NRA) annual convention in Chicago, May 16-17. Gen. Earl T. O'Loughlin, commander, Air Force Logistics Command, will be the keynote speaker.

This will mark the 30th year since the award program began. It is managed by the Food Management Division, Directorate of Housing and Services, HQ Air Force Engineering and Services Center (HQ AFESC), Tyndall AFB, Fla.

The Hennessy awards are based on a two-step process. Major commands nominate their best facilities in each category. These are then evaluated by teams of food service experts who travel worldwide to perform intense, on-site evaluations.

The teams are headed by HQ AFESC and include volunteers from the NRA, the International Food Service Executives Association (IFSEA), and the Society for Foodservice Management (SFM).

Mulitple: — Capt. Mike Filan (HQ AFESC); Michael Barclay, vice president, Southern Cafeteria Co., Birmingham, Ala. (SFM); and Marshall Scott, president, and chief executive of Marshall Scott Enterprises, St. Louis, Mo. (NRA).

Single: Capt. Kathryn A. Riley (HQ AFESC); San Francisco restaurant owner Bill Monro (NRA); and Albert Short, Northville, Mich., a retired ARA Services, Inc., food services director with 50 years experience (IFSEA).

Other 1986 nominees in the multiple category were:

- Eglin AFB, Fla., Air Force Systems Command;
- Kessler AFB, Miss., Air Training Command;
- Kirtland AFB, N.M., Military Airlift Command;
- Osan AB, Korea, (PACAF); and
- Beale AFB, Calif., Strategic Air Command (SAC).

Other nominees in the single facility category were:

- King Salmon Airport, Alaska, Alaskan Air Command;
- Wright-Patterson AFB, Ohio, (AFLC);
- Goodfellow AFB, Tex., (ATC);
- Cheyenne Mountain Complex, Colo., Air Force Space Command;
- McConnell AFB, Kans. (SAC);
- Shaw AFB, S.C. (TAC);
- RAF Fairford, United Kingdom (USAFE);
- Ft. George G. Meade, Md., Electronic Security Command; and,
- Altus AFB, Okla. (MAC).

Thirty years after its inception, the Hennessy Award is regarded as the highest honor any Air Force food service can earn, and is credited as one of the main motivators behind the tremendous improvements in USAF food service.

Inspired by the recommendation of the late John L. Hennessy, while he was a member of President Eisenhower's Hoover Commission, the award program was established in 1956, with the first trophy presented, in 1957, to Charleston AFB, S.C.

The Hennessy program was created to promote effectiveness, professionalism, morale, image, and new management concepts throughout Air Force food service organizations motivated by spirited competition and worldwide recognition for being the best.

The award is based on thorough evaluation of the entire scope of an installation's food service including management, force readiness support, food quality, employee and customer relations, resource conservation, appearance, training, and safety.

MSgt. James F. Denney is chief of Media Relations, Public Affairs office, HQ Air Force Engineering and Services Center, Tyndall AFB, Fla. He previously was an instructor at the Defense Information School (DINFOS), Ft. Benjamin Harrison, Ind. He holds an associate's degree in Public Information from the Community College of the Air Force; and has done other college work at Purdue University, University of Maryland, and Riverside City College.

General Wright Retires

by H. Perry Suillivan Jr.

Maj. Gen. Clifton D. Wright Jr., director, Engineering & Services, HQ U.S. Air Force, since August, 1982, retired Feb. 28 after more than 30 years active Air Force duty. He received the Meritorious Service Medal honoring his numerous achievements and his dedicated service in Pentagon ceremonies before Lt. Gen. Leo Marquez, Air Force Deputy Chief of Staff, Logistics & Engineering.

Attending the ceremony were top-level representatives from the offices of the Department of Defense, Secretary of the Air Force, Chief of Staff, and the Logistics & Engineering family, including the USAF E&S worldwide leadership.

General Wright previously was both E&S deputy director and first commander of the Air Force Engineering & Services Center, Tyndall AFB, Fla., from 1978-1980, then moved to the deputy director's position in Washington fulltime.

General Wright is succeeded by Maj. Gen. George E. (Jud) Ellis, formerly deputy director.

A Gala Farewell

General and Mrs. Wright were saluted Feb. 27 at the USAF E&S 39th anniversary ball at Andrews AFB, Md., attended by DOD and USAF leaders and the uniformed engineering chiefs.

His achievements as director, and the highlights of his career leading to the directorship in August, 1982, were highlighted at the ball — not always seriously.

The E&S Team

He first became part of the combined civil engineering and base service organization in USAFE after graduating from the Industrial College of the Armed Forces as a colonel-selectee. An architect-engineer, he was assigned by Brig. Gen. Robert C. Thompson to be director of Services. The short-lived assignment was a message that Services had importance. Gen. David C. Jones, then Commander-in-chief, USAFE, felt base services could not effectively contribute to the quality of life of Air Force people in Europe if the function was buried at wing or base level. General Thompson assumed Services' advocacy and became the first DCS/Engineering & Services.

General Wright moved to the Engineering directorate where he carried the ball for quality of life and many other taskings from the General Jones "round table." Quick answers placed on General Jones' table the next day and intense followup earned General Thompson and his team the reputation of being miracle workers. General Wright was a member of the "skunk works," with General Thompson's civilian assistant DCS, Charles O. Hudson (now special assistant to the director), and Lester Henriksen (now the E&S representative to the Office of Scientific Research).

Achievable miracles included better exchanges, commissaries and housing; and improved mission support facilities. Col. Roy Kennington, vice commander, HQ AFESC, as a captain was assistant commander, North Germany Area, Army/Air Force Exchange Services, Wiesbaden. General Thompson invited him to explain to then-Colonel Wright and the skunk works how to get more AAFES funds for exchanges. "To say the least, we had some interesting philosophical discussions on hours of operation, leisure time activities, and AAFES/USAFE responsibilities and capabilities to achieve General Jones' goals for customer support," he said.

"But, the important thing is that General Thompson and General Wright felt that we could do more — far more — than had ever been done before. They were right," he said.

General Marquez presents the retirement certificate to General Wright.

The Wrights — Chip, Lauren, General and Mrs. Wright, Lisa and Chris.

"I feel that the marriage between Engineering and Services was one of the most important developments in the Air Force," said General Wright. "It marked the turning point in the way we took care of our people; it made E&S people work together at the headquarters level to achieve the same goals; it brought us a new way of thinking. More than anything, it brought us new people from Services with new ideas, some different ways of doing things, and a lot to contribute."

When General Thompson needed a "DE-2," he went way down the seniority list and picked Duke Wright. The "miracle-worker" image was fully earned by the Thompson-Wright E&S team when General Jones ordered USAFE headquarters moved to Ramstein, 70 miles away. A new hardened command post, new communications facilities, and other essential structures were augmented by a complete array of new family-support facilities.

"General Bob Thompson did more than any other person to show me that I could do almost anything that I reasonably thought I could do, and some things that I didn't think I could do," said General Wright.

He was chosen USAFE/DE when General Thompson moved to Washington as deputy director.

The Wright Choice

Gen. Russell E. Dougherty (USAF, ret.), then Commander-in-chief, Strategic Air Command, needed to redirect the SAC E&S program toward renewal and quality of life. General Thompson, who had succeeded Maj. Gen. Billie J. McGarvey as director, said to pick Duke

Services

- Moved Services into the E&S leadership; O-6s went from one to 12; integrated Services into the decision process
- First Services colonel to be a DE-2; first civil engineer as commander of a Services squadron
- As AFCOMS board chairman, facilitated getting an E&S officer as AFCOMS commander; made AFCOMS full members of the E&S team
- Took responsibility at HQ AFESC for USAF Mortuary Affairs
- Got more Temporary Lodging Facilities for Air Force people through the Air Force Welfare Board
- Moved enlisted dorm space standards in the USAF to best among the armed forces
- Pushed AF food service to highest overall customer satisfaction in the armed forces
- Institutionalized the School of Engineering & Services at Wright-Patterson AFB, Ohio; fostered moving the Services officers' courses from Lowry AFB, Colo., to AFIT, cementing the E&S bond.

Design and Construction

- Improved construction cost analysis
- Gained more AF control over design
- Promoted design excellence as a good investment
- Reshaped the design awards program
- Recognized USAF people for design excellence
- Created the design advisory board.

Environment

- Advocated environmental cleanup funds
- Advocated waste, sludge reduction as alternatives in hazardous waste management; agressively moved to remedy hazardous waste problems at key depot facilities
- Launched first USAF comprehensive survey of potential underground environmental problems
- Strengthened comprehensive planning role of regional civil engineers.

Wright. Shortly after General Wright arrived at SAC headquarters, General Dougherty pinned on his first star.

SAC was faced with major challenges. General Dougherty said he could turn to General Wright, tell him to take care of something, and not have to worry about it getting done. He also found that General Wright gave straight answers, and was a natural leader and team builder. He was instrumental in turning around SAC's O&M mission — including developing a comprehensive roofing program; greatly improving housing and services; and supporting the primary mission — keeping airbase and missile facilities capable of launching weapons systems.

SAC became an innovator instead of a follower. *A la carte* feeding was invented; improved post-occupancy housing checkouts overcame a major family irritant; missile sites got better food service; SAC "bought into" Prime BEEF and initiated Prime RIBS — Readiness In Base Services. General Dougherty wanted SAC people better cared for, and General Wright carried it out in style.

HQ AFESC

When HQ AFESC was formed the deputy's "star" from Washington was moved to Tyndall. General Wright was picked to serve in the dual deputy directorship/Center commander job. He formed his team for the future. With the star came the associate deputy director, Ben Meredith. The last commander of the Air Force Civil Engineering Center was then-Col. Ellis, who now became vice commander. Heading the activation task force was now-Col. Robert G. Gilbert, who became chief of Resources. Colonel Kennington moved from SAC to be chief of Food Management, then chief of Services, and finally deputy director, Housing and Services.

Functionally, the latter was assimilated from Kelly AFB, Tex., where half a team of Services people from Air Force Logistics Command stayed to form the Commissary Service, and the remainder moved to Tyndall. Also inbound were the former AFLC food service mission from Philadelphia; engineering elements from the Pentagon and Bolling AFB, D.C.; laboratory mnissions from Kirtland AFB, N.M.; and the CEMIRT mission from Colorado — institutionalizing "Pentagon South."

General Wright's tenure at Tyndall ended when the director, Maj. Gen. William D. Gilbert, brought the star slot back to Washington. In time, General Wright received his indoctrination under fire, journeying to the Congress to testify in behalf of new construction, resolving major problems, representing national interests in the Israeli airbase construction, and advocating the ground-launched missile beddowns.

When General Gilbert retired, General Wright moved up to the directorship and initiated a global program of change and study. (See the adjacent figures.)

The E&S Partners

He continued his strong interest in the Society of American Military Engineers and other professional organizations. As both vice president and president of SAME, he urged architectural and engineering firms toward excellence in design, delivering quality on time and under budget; and as a facilitator in applying industry expertise and capabilities to urgent need. The rapid return to full mission capability of Bldg. 3001, Oklahoma City ALC, Tinker AFB, Okla., and the ahead-of-time, under-cost completion of the Space Command operations center are among the results.

His advocacy of design excellence brought him a fellowship with the American Institute of Architects, a singular honor.

He also strengthened the relationship between the Air Force and its design agents, the Army Corps of Engineers and the Navy Facilities Engineering Command. Gen. Vald Heiberg, Army Chief Engineer, cited the strong cooperation engendered under General Wright's leadership.

The Early Wright Years

General Wright was born in New York City of an Army family from the deep south. The family later lived at Langley Field, Va., Ft. McClellan, Ala., and Albany, Ga. At the end of World War II, they were among the first

accompanied family tours permitted in Germany. Living conditions for U.S. forces ranged from austere to almost adequate, supported by commissaries, exchanges and housing improvised from existing resources. A former DOD official characterized the infrastructure as "old horse stables and airbases put to use in spite of themselves." In later years, as a young colonel, General Wright modernized or replaced many of these facilities; and as a general officer helped to program a renaissance in Europe.

A friend of the loyal, hard-working German people employed by the Air Force, General Wright was honored years later as a honorary citizen of Trier. Bert Jordan, deputy chief of the German-staffed Civilian Service Unit, 7002nd CE Sq., Ramstein AB, came to the U.S. to represent the German people at his retirement.

The Wright family moved to Eglin AFB, Fla., after Germany. After graduation from high school at Ft. Walton Beach, General Wright went Clemson University. There, he majored in architectural engineering and joined AFROTC. Years later, he was named a distinguished alumnus of Clemson.

After commissioning and graduation, he went on active duty to Tachikawa AB, Japan, where he did design. From there he moved to Camp Cooke Army post, now Vandenberg AFB, Calif., first as project officer for Capehart Housing, then the Atlas weapon system, 1st Missile Div.

He was then named base civil engineer, San Vito AS, Italy; BCE at Manzano AFS, N.M.; went to Air Command and Staff College, Maxwell AFB, Ala.; and from there to the Military Assistance Command, Vietnam, where he programmed urgently needed construction.

Returning to the U.S., he was command engineer for the Defense Atomic Support Support Agency, Sandia Base, N.M.; followed by the ICAF assignment just prior to going to USAFE.★

E&S Strategy

- Instituted the first Strategic Plan
- Drove redefinition of support forces warfighting doctrine and contracted exploration of the future role of E&S forces and the aerospace installations
- Established the E&S Requirements Board and the Research Technical Advisory Group
- Involved E&S in future space programs
- Sought full recognition of the E&S Laboratory and spearheaded getting the new laboratory building funded.

O&M

- Created new mission statement for O&M, based on warfighting mission
- Chartered Project IMAGE — Innovative Management Achieves Greater Effectiveness — dealing with base-level O&M mission, organization, and support equipment, including tooling, vehicles, training and skill requirements
- Drove energy-efficient standardization, simplification of heating, ventilating and air conditioning design, installation and maintenance
- Started beneficial change in housing maintenance and operations to make housing better serve USAF people
- Launched a campaign to interest industry in third-party projects, ranging from heating and electrical plants to housing.

General Wright says farewell to AFESC.

Readiness

- Supported overhaul of training at Field 4, Eglin AFB, with better organization, field improvements, new equipment, a realistic curriculum taught under field conditions, and integrating other members of the airbase recovery
- Drove study of airbase survivability and recoverability in SALTY DEMO
- Though frustrated frequently, constantly fought for added uniformed Services slots in the CONUS to assure wartime manpower
- Initiated an acquisition team to field a new-technology rapid runway repair kit
- Encouraged AFCOMS participation in the wartime mission.

The Director Salutes the Winners

'Maj. Gen. Clifton D. Wright Jr. hosted his last Engineers' Week observance as director, Engineering & Services, HQ U.S. Air Force, by paying tribute to "the people who have demonstrated that excellence is our goal everyday." The observance was held Feb. 21 at Andrews AFB, Md.

Guests included Gen. Russell E. Dougherty (USAF, ret.), executive director, Air Force Association; the Hon. Robert A. Stone, deputy assistant Secretary of Defense, Installations; James Boatright, deputy assistant secretary of the Air Force, Installations Environment and Safety; Lt. Gen. William Thurman, vice commander, Air Force Systems Command; Rear Admiral Kenneth G. Wiman, chief of the Office of Engineering, U.S. Coast Guard; Brig. Gen. Walt Bachus (USA, ret.), executive director, Society of American Military Engineers (SAME); and John Busby, president of the American Institute of Architects.

Other distinguised representatives from HQ USAF/LEE included then-Brig. Gen. George E. (Jud) Ellis, now major general and the director; and the associate director, Gary Flora.

Awards presented at the luncheon included those given to winners of the 10th annual USAF design competition and two special design excellence achievement awards; recognition for the Air Force military and civilian engineers of the year, cited by the National Society of Professional Engineers earlier in the week; and winners of the Air Force engineering honors program conducted each year.

Winners and runners up for the competition this year respectively were:

Newman Medal for the outstanding Air Force E&S officer of the year (presented by SAME) — Col. Ray D. Schwartz, deputy chief of staff, Engineering & Services, HQ Strategic Air Command (SAC/DE); Col. William R. Sims, DCS/DE, Air Force Systems Command.

Colonel Schwartz receives Newman award.

Military Civil Engineering Meritorious Achievement Award — Capt. Daniel W. Bowholtz, 343rd Civil Engineering Squadron, Eielson AFB, Alaska (Alaskan Air Command); and Maj. Jens E. Christensen, 18th Civil Engineering Group, Kadena AB, Okinawa (Pacific Air Forces).

Civilian Civil Engineering Meritorious Achievement Award — Ms. Mary C. Giltner, 321 Combat Support Group, Grand Forks AFB, N.D. (SAC); and Gary R. Gaudreau, 60th CES, Travis AFB, Calif. (Military Airlift Command).

Capt. Bowholtz

Ms. Giltner

Civilian Civil Engineering Manager of the Year (branch-level chief and above) — Gary N. McMachen, 44th CES, Ellsworth AFB, S.D. (SAC); James D. Cooper, Armaments Division civil engineering, Eglin AFB, Fla. (AFSC).

Civilian Civil Engineering Manager of the Year (below branch chief) — Arlyn G. Johnson, 2750th ABW/CES, WPAFB, Ohio (AFLC); Walter Mueller, 377th CES, Ramstein AB, Germany (USAFE).

McMachen

Johnson

Civil Engineering Senior NCO of the Year (MSgt. - CMSgt.) — MSgt. Lou Riccardino, 401st CES, Torrejon AB, Spain (U.S. Air Forces in Europe); MSgt. David A. Tanner, 351st CES, Whiteman AFB, Mo. (SAC).

Civil Engineering NCO of the Year (Sgt. - TSgt.) — TSgt. Robert W. Rice, HQ PACAF/DE, firefighting division, Operations and Maintenance Directorate; TSgt. Charles E. Hiles, 2750th ABW/CES, WPAFB, Ohio, Air Force Logistics Command.

Sgt. Riccardino

Sgt. Rice

Goddard Medal (sponsored by SAME) — SMSgt. James R. Keefe, 485th CES, Florennes AB, Belgium (USAFE); SMSgt. Daniel L. Anderson, 15th CES, Hickam AFB, Hawaii (PACAF).

Col. Wi neering honore design

Large b ager of burgh trophy.

Col

ol. William R. Sims, DCS/Engi-eering & Services, HQ AFSC, is onored for contributions to esign excellence.

Gary Lynn's design achievements brought numerous honors to the Air Force Regional Civil Engineer—Central Region.

NSPE president Joseph H. Kuranz; Major Costigan; Gary Flora, Associate Director, USAF Engineering & Services; and Congressman Earl Hutto, representing Florida's first district.

rge base housing branch man-er of the year, Jo Willis, Platts-rgh AFB, N.Y., receives the phy.

Small base housing branch manager of the year, Ron Wilkins, England AFB, La., receives trophy and plaque.

Sgt. Keefe

Col. Celmer

Minton Award for the best article in the Quarterly, 1985 (sponsored by the Aerospace Education Foundation, Air Force Association) — Lt. Col. Philip R. Celmer, HQ AFLC/DE, for the article, "Sell, my Good Man!" in the Spring issue.

Organizational Awards

Curtin Award (sponsored by SAME) for the best civil engineering base-level organizations in the Air Force — 18th CEG, Kadena AB, Japan (PACAF); 96th CES, Dyess AFB, Tex. (SAC).

William H. Bordner Awards for the best heating or power plants in the Air Force —

- **Category I Electrical Generation:** Det. 26, 2113th Information Security Squadron, Mt. Nardello, Italy (Air Force Communications Command);
- **Cat. II, Elec. Gen.:** 3rd CES, Clark AB, Philippines (PACAF); runner-up, 2nd CES, Buckley ANG Base, Colo. - (SPACECOM);
- **Cat. I, Heating:** 832nd CES, Luke AFB, Ariz. (Tactical Air Command); runner-up, 22nd CES, March AFB, Calif. (SAC);
- **Cat. II, Heating:** 436th CES, Dover AFB, Del. (MAC); runner-up,USAF Academy, Colorado Springs, Colo. (USAFA).

NSPE Awards

The National Society of Professional Engineers honored two Air Force professionals during Engineers' Week observations in ceremonies near Washington

Maj. Robert R. Costigan, of the Engineering & Services Laboratory, HQ Air Force Engineering & Services Center, Tyndall AFB, Fla., was named Air Force military engineer of the year.

Chief of pavement technology research and development, Major Costigan was cited for extensive research on nondestructive testing of airfield pavements.

Harold D. Bosse received a plaque honoring him as the civilian engineer of the year for the Air Force.

Bosse, who works for the Strategic Air Command, has been successful in using thin concrete overlays, bonded to older concrete, as economical alternatives in SAC's repaving program. He has also initiated work investigating liquid joint sealant failures.

He is a registered professional engineer in Nebraska.

Kuranz, Bosse, Flora.

General Ahearn

General Harty

GEN. AHEARN IS NEW DEPUTY DIRECTOR; GEN. HARTY TO USAFE

Two key changes have been announced by Maj. Gen. George E. (Jud) Ellis, Air Force director, Engineering & Services (HQ USAF/LEE).

Brig. Gen. Joseph A. Ahearn, deputy chief of staff, Engineering & Services, HQ U.S. Air Forces in Europe (USAFE/DE), Ramstein AB, Germany, will be the new deputy director, HQ USAF/LEE. He will be succeeded by Brig. Gen. John R. Harty, HQ Military Airlift Command/DE, Scott AFB, Ill.

General Ahearn is noted for orderly growth in the military construction program in USAFE, needed to "buy out" weaknesses and problems; major improvements to the quality of life for Air Force families; significant improvements in North Atlantic Treaty Organization funding for projects; and developing a high degree of mutual understanding among allied forces. He drove for testing technologically advanced airbase recovery procedures, and standardizing where possible with the NATO allies.

Before USAFE, he was chief of the Programs division (HQ USAF/LEEP), where he was known as the "good shepherd" to the E&S elements in the Program Objectives Memoranda. He was cited for effectiveness in communicating with major commands, the Air Force Board Structure, the secretariats of the Air Force and the Department of Defense, and with the Congress.

General Harty is a previous director of Laboratories at the former Air Force Civil Engineering Center, Tyndall AFB., Fla. Known for his involvement with the Israeli airbase project built as a result of the Camp David peace accords; he headed the feasibility study team, and developed a construction and site activation plan while on temporary duty from HQ MAC. He subsequently was deputy program manager and Air Force Regional Civil Engineer for the project in Tel Aviv.

He returned to HQ MAC as the assistant DCS/DE, and succeeded Brig. Gen. David M. Cornell when the latter moved to HQ AFLC/DE. General Harty's promotion to the rank of brigadier general was announced last December.

General Ahearn graduated from Notre Dame University with a bachelor of science degree in Civil Engineering. He earned his master's degree in Engineering Management from Syracuse University. He graduated from the Industrial College of the Armed Forces. In Vietnam, he was commander of the 554th RED HORSE Sq., Cam Ranh Bay AB. He also served with HQ 8th Air Force, Security Service in Europe, HQ Air Training Command, and at Vandenberg, Calif., and Craig AFB, Ala. Before heading the Programs division in Washington, he headed the Housing division

General Harty graduated from North Dakota University with a bachelor of science in Civil Engineering. He holds the master's and doctoral degrees in Civil Engineering from the University of Illinois. He is a graduate of the Armed Forces Staff College and the Air War College.

He has served with Aeronautical Systems Division, Wright-Patterson AFB, Ohio; within Alaskan Air Command; at the U.S. Air Force Academy; Tan Son Nhut AB, Vietnam; and Myrtle Beach AFB, S.C.

During his tenure in MAC, the command underwent a significant renewal program, affecting base appearance, quality of life, and mission support facilities. MAC also came to terms with environmental issues.

AFRCE-CR Celebrates: Thirty-eight and Shooting Straight

Past and Present leaders, AFRCE-CR (left to right): Col. Ivan Impson, Col. Adolf Kroeber, Lt. Col. Richard G. Toler, Col. James Benedict, Col. Sidney Key, Col. Lawrence Muncie, all retired, and Col. Elton D. Scheideman.

by Col. Elton D. (Dale) Scheideman

The Idea

Most of us go about our job each day without much forethought as to why and how our duties evolved. We come to organization, contribute our part, and move on. What becomes significant over time, yet rarely gets documented, is the legacy of all those people who served the organization and their individual contributions. This becomes the organization's history; and these produce pride and give real meaning to the day-to-day activities of its contemporary members.

It is this realization that prompted the Air Force Regional Civil Engineering Office in Dallas, Texas, to celebrate its 38th anniversary during the Texas Sesquicentennial year. Once spawned, the idea of AFRCE also evolved into a reunion of Central Region alumni. Hundreds of letters were dispatched to former employees and associates inviting them to the Anniverary Celebration in Dallas on February 14 and 15.

Gathering and Openhouse

The celebration began with an open house at the AFRCE on Friday. Throughout the day more than 100 invited guests and past employees stopped by the AFRCE offices to tour the facilities, discuss the current operation and renew old acquaintances.

Each guest was greeted by a member of the AFRCE staff who assisted with registration and provided information about the various activities. After photographs of each guest were taken for display in the conference room, AFRCE project managers conducted short tours. While the atmosphere was congenial and relaxed, the open house visitors saw the AFRCE office in a somewhat typical active business day. Projects, displays, equipment demonstrations, and multi-media presentations were set up to help tell the AFRCE story.

It was evident that, in addition to the present office environment, visitors enjoyed the glimpse of history represented by photographs, slides, and relics, memos and letters. Visitors noted that the office had changed from the old formal alignment of desks and the use of drafting boards and slide rules to new systems furniture, computers, and a modern phone system. There was some evidence of excitement when new projects and activities were observed, but the real enthusiasm was associated with the renewal of old an acquaintance and other "memory-jogging" encounters.

An evening cocktail party was held at the Dallas Sheraton hotel which provided a pleasing, informal way to

Current AFRCE-CR leadership (left to right): Colonel Scheideman, Lt. Col. Roland S. Barton Jr., Lt. Col. Joseph Lonki, Lt. Col. Paul Garcia, Maj. Michael T. Krzykowski, Maj. Don-Michael Bradford, and Capt. Brent N. Mossbarger.

end the first day of celebration. The initial gathering and open house afforded the current AFRCE staff a rare opportunity to learn about and relate to its past. Wine, cheese, and old friends — what could have been better?

Alumni

The Dallas AFRCE opened its doors in 1948. The reunion was represesnted by alumni from as far back as 1951.

A large number of AFRCE-CR alumni attended the 2-day event. They not only were able to see how we operate now, but were also able to enlighten us as how our organization operated in the past.

Alumni and guests travelled from all over the United States to attend the reunion in Dallas. They came from 11 states as well as distant cities in Texas. Attendees included former AFRCE-CR employees, a former Director of Engineering and Services, Maj. Gen. Billie J. McGarvey (USAF, ret.); and Space Command deputy DCS for Engineering and Services, Col. Pete LoPresti. Many of the alumni came a few days early and stayed after the offical celebration ended to take advantage of the warm weather and to see how Dallas had changed.

We are extremely pleased that six of the past Air Force Regional Civil Engineers were able to attend. They included retired Colonels Ivan Impson, Richard Toler, Adolph Kroeber, James Benedict, Sydney E. Key and Lawrence Munsie.

Dining Out

A formal Dining Out ceremony was held Feb. 15 at the Sheraton. More than 170 AFRCE alumni, staff and guests attended the dinner. In addition to alumni, the dinner was attened by representatives of the Air Staff, ATC, AFCC, Space Command, the Army Corps of Engineers, the USAF Engineering and Services Center, and members of the architectural and engineering communities.

I served as president of the mess while Capt. Brent Mossbarger preformed the duties of Mr. Vice. The evening was truly a unique occasion for many of the participants, who had never been to an official military dining out. The tradition and history of the Dallas AFRCE were espoused during an entertaining impersonation of Gen. George S. Patton, performed by Maj. Don-Michael Bradford. Gen. McGarvey provided brief comments about his tour of duty at the Dallas AFRCE. Before the gathering was adjourned, I presented achievement awards to Thurman Thomes, an alumni, and Mary Heers of the current staff for their outstanding contributions in organizing the reunion celebration.

Wrap Up

Through persistent efforts by the current AFRCE staff, an idea was born out of a desire to place more emphasis on AFRCE heritage was brought to fruition. This unique gathering provided a chance for alumni and friends to reminisce and, at the same time, gave staff a better appreciation of the contributions that AFRCE-CR has made throughout its history to the Air Force mission. James F. Boatright, deputy assistant Secretary of the Air Force, commented on these outstanding contributions in a letter commemorating the 38th Anniversary. He wrote, "The many contributions of this fine organization have greatly benefitted the Air Force. Each member of the Central Region AFRCE, both past and present, should stand tall with pride in their many outstanding accomplishments."

Colonel Scheideman with Maj. Gen. Billie J. McGarvey (USAF, ret.).

Lt. Col. and Mrs. Paul D. Garcia, Col. (USAF, ret.) and Mrs. John Trommerhausser.

Col. Elton D. (Dale) Scheideman is the Air Force Regional Civil Engineer-Central Region. He holds a bachelor of science degree in Architecture from the University of Kansas. Prior to his present position, he served as the assistant deputy chief of staff, Engineering and Services for U.S. Air Forces in Europe. A registered professional architect in Kansas, he is a member of the Society of American Military Engineers (SAME) and is first vice president of the Dallas post. A graduate of the Air War College at Maxwell AFB, Ala., his decorations include the Bronze Star, Meritorious Service Medal and Legion of Merit.

No Time for Sergeants 1986

Dorms, Wangs, Courtesy and Consideration

by Anne Strong

Rows and rows of iron cots, covered with crisp, white sheets, stretched so tightly you could bounce a coin on them; green wool blankets, precisely folded at the foot of each bed. One metal upright locker stands between each bed, and from the ceiling hangs an unshaded 60-watt light bulb with a broken pull chain.

Like most civilians, my conception of life in the military service is largely derived from motion pictures and television programs which theatrically portray the military. When I discovered this job through Cornell University, I half expected such a sight when I arrived at Davis-Monthan AFB. What I actually did see left me with a relieved feeling of surprise — modern living arrangements rivaling those of many mid-scale hotels. Also, quite surprisingly, a range of room types to suit any and every kind of guest.

After a few days, I got used to the idea that the real-life Air Force was actually quite different than its cinematic counterpart. But, something else was not quite right. The level of discipline was not as rigid as I had prepared myself for. At first this bothered me. I had the idea that I would be privy to the kind of life most people must dedicate 4 years of their life to witness — the classic military life. What I saw was a reasonably efficient work atmosphere where free speech is unencumbered by fear of repercussions from those who outrank the speakers. This atmosphere works with all minds in participation, not only the minds of those with more stripes.

During the time I've spent at Davis-Monthan, I've had a comprehensive look at the billeting operation. I wish all those employed could have the opportunity to see it function as I have. It is important from a management standpoint to know how each individual functions as a part of the whole, to ensure the smooth flow of the final product. It is equally important for the employees to understand how their actions affect the actions of others. As a desk clerk, I understood what a headache it is to try to be infallibly precise when 10 people are waiting impatiently in front of you; working with the accountant demonstrated how maddening it is when the daily paperwork does not balance because of an error at the desk which will take hours to trace and resolve. When you get the chance to see how everything interrelates, you become a much more sympathetic person. It becomes quite difficult to justify shortcuts when you know they will mean unnecessary work for someone else.

Management philosophy in action was not all I encountered at Davis-Monthan. I had the opportunity to work on several projects which taught me specific skills, as well as broader insights into the hospitality industry. I will take these with me when I return to Cornell. I spent a great deal of time with computer projects. One in particular tested my accounting skills and allowed me to learn an electronic spreadsheet program called the Lotus 1-2-3 to create a billeting budget model. This project is one which taught me much that will be useful through college and into my future career.

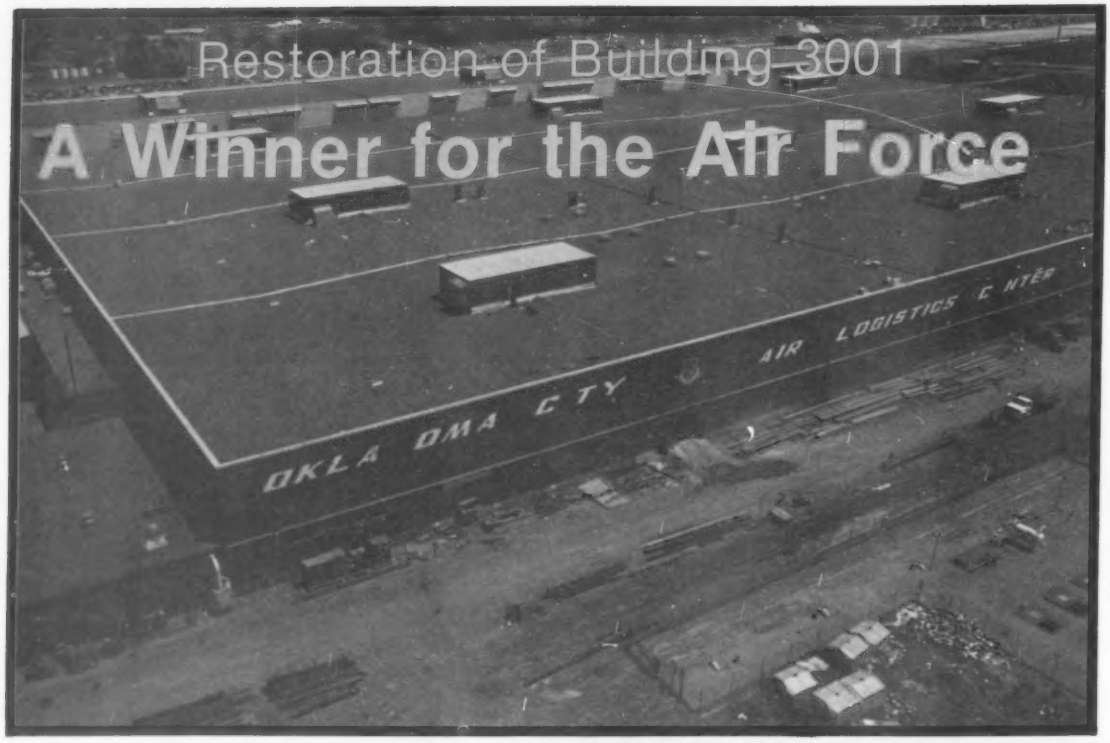
I also learned about the billeting portion, of the Services Information Management System (SIMS), which is currently operated on a WANG computer. I was really impressed with the speed, efficiency, and professional attitude this system created.

With some amount of time invested in almost every department of the billeting office, I can compare it with the hospitality ideal as I have learned it at Cornell. I feel that this could be accomplished by any hospitality student after 10 weeks in a billeting operation. Students in this field can offer a detailed list of observations, as compared with their textbook examples — a practice which could aid in seeking out inefficiencies within the operation. The Air Force could only benefit by such suggestions and outside input.

The benefits of a summer hire program do not end here. It is a fact that each summer thousands of hospitality students seek summer employment. Theirs is a course of study which places great emphasis on work experience. It only makes sense for the Air Force to take advantage of these skilled students in need of experience. Once hired, they need little training and can offer many ideas to a management willing to listen. This is an opportunity for both students and the Air Force, mutually beneficial to both parties. I would strongly recommend such a program to fellow classmates as a worthwhile learning experience. Perhaps this type of exposure could lead to future employment opportunities for full-time management positions. ★

Anne Strong, like all full-time students in the School of Hotel Administration at Cornell University, was required to work two 10-week periods to gain practical experience in the hospitality industry. She was selected to work as a summer hire at the Davis-Monthan billeting operation, a test program allowing her to fulfill an academic requirement, while providing special management skills and insight into the billeting branch. The goal of the exchange was to foster a better understanding of military hospitality operations and will lead to future summer or full semester internship programs. Anne is now a junior at Cornell.

Restoration of Building 3001
A Winner for the Air Force



Building 3001, after restoration; before repairing sign.

by Lt. Col. Roland S. Barton Jr.

On Sept. 1, 1985, the Air Force Regional Civil Engineers - Central Region, (AFRCE-CR), produced a "winner." A team finished restoring Building 3001 after the most costly fire of the last 100 years in the Oklahoma City area. The team consisted of representatives from: AFRCE-CR; the U.S. Army Corps of Engineers, Tulsa District (CoE); Tinker Air Logistics Center (ALC), and the Tinker Base Civil Engineering squadron.

The $60 million project was completed less than 10 months after the fire. On Nov. 12, 1984, Veterans Day, a blaze, ignited by a workman's torch, started Building 3001 burning. For 40 hours it burned out of control destroying 17 acres of roof and all the mechanical and electrical systems in the building's north end. The flames were so hot that much of the supporting structural steel lost its strength and integrity.

Building 3001 is a mammoth structure consisting of more than 48 acres of roof. It houses the largest jet engine overhaul and repair operation of its kind in the Western World and is responsible for overhauling some 1,300 jet engines a year. It was estimated that for each month the damaged portion of this facility was out of operation, it would cost the government $5 million. Additionally, in the north end there was a numerical control tooling section which could not be relocated, performing tasks which could not be accomplished at any other location. Because of the strategic importance of Building 3001, it was imperative to restore operations in the north end as quickly as possible. Therefore, the Sept. 1, 1985, date was established for completion.

In the latter part of November 1984, it was decided the only way to ensure there were no delays in the design and reconstruction of the facility was to establish an on-site team consisting of representatives from the offices (AFRCE-CR, CoE, ALC, and BCE) having control of all aspects of the project. The team would have full authority to act in behalf of their respective offices.

By Dec. 12, 1984, the team had initiated a plan which would allow restoration to commence immediately, while final design and contracting were completed for the major restoration effort. Using expedited contracting techniques, contracts to remove some 680 cubic yards of asbestos waste, stabilize the facility, and enclose the numerical control tooling section were finalized. These contracts were closely followed by a demolition contract for removal of the damaged roof, structural steel, and the electrical and mechanical systems. The first series of contracts was awarded and work began before Christmas, with a scheduled completion time of 30 days.

Less than 30 days later, the demolition contract was awarded for $3.4 million. Immediately upon completion of the asbestos removal, work to remove the damaged roof and utilities started. The demolition contractors cut three construction corridors through the exterior walls so large cranes could enter and remove the damage. These same corridors would later be used by cranes to reconstruct the roof and structural steel support.

The team met daily with the architect/engineering firms—HTB, Inc. and C.H. Guernsey & Company of Oklahoma City—and contractors to work out each small detail from utility outages to pedestrian traffic, thus ensuring work progressed as rapidly as possible and yet did not disrupt the numerical control tooling

section or the operations ongoing in the south end of the building.

In early January, 1985, the team decided that the only way the reconstruction could be accomplished in the time frame required was to have a contract which allowed flexibility to select a prime contractor before completion of construction plans. Approval was requested and granted to negotiate a cost-plus-fixed-fee contract.

After a competitive elimination process and oral interviews, Hensel Phelps Construction Co. of Greeley, Colo., was selected and the contract was awarded on Feb. 9, 1985, almost 2 months before the final construction plans were issued. Orders had already been placed by the CoE for structural steel and electrical power cable, vital long leadtime items, to ensure they were available when Hensel Phelps needed them.

On a project this big, with completion scheduled in about 25 percent of the normal time, having materials available on the job site when they were needed was a major logistics problem. The contractor was given a high enough priority and flexibility to expedite what he needed.

Installation of the latest state-of-the-art, four-ply surface roof in late April progressed at the rate of half an acre per day. The roofing subcontractor used four-wheel scooters to move materials and logged 2,000 miles of travel on top of the building. Air-handling (HVAC) units along the building's perimeter were set by crane with the remainder being placed by helicopter. Skycrane helicopters made 60 lifts in one day to place HVAC units on the roof.

Inside, 60,000 square feet of office space was reconstructed, 650,000 square feet of floor slab was repaired, and all the electrical/mechanical systems were replaced. More than 40 miles of fluorescent lighting was installed and the entire industrial waste system was replaced. The majority of the work was carried out by subcontractors on firm/fixed-price contracts to Hensel Phelps. Hensel Phelps competitively awarded more than 60 procurement packages

Once Hensel Phelps started work, the team met with Hensel Phelps and HTB at 8:30 a.m., 6 days a week to discuss progress, resolve problems, and coordinate utility outages and facility utilization. Additionally, to facilitate field changes to the design, the team was committed to review and approve/disapprove all project revisions within 24 hours.

Bldg. 3001 just after the fire.

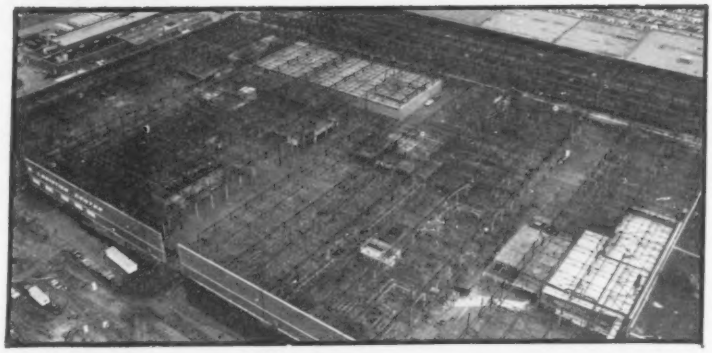
The restoration of Building 3001, in the time scheduled, involved close coordination of 1,273 different activities carried out by as many as 1,100 personnel. The personnel worked shifts of 2 10-hour days, on rolling 4-day-per-week schedules to maximize manhour availability without overworking any individual.

The safety record speaks for itself. There were only two lost-time accidents, one broken ankle and one broken arm, while expending almost 1 million manhours to complete the project.

The Building 3001 project challenged the know-how and cooperation of all involved to complete a 3-year construction effort in 9 months. Because the AFRCE-CR, ALC, BCE, and CoE provided the personnel and gave them the authority and support to get the job done, Building 3001 restoration was completed in record time and within the budget.

Lt. Col. Roland S. Barton Jr. is director of Military Construction, AFRCE-CR, Dallas, Tex. Previously he was commander of the 18th Civil Engineering Operations Squadron at Kadena AB, Japan. He received his bachelor of science degree in Public Administration from Webster College in Mo., completed Squadron Officers School, Air Command Staff College, and the Industrial College of the Armed Forces. He is a registered professional engineer in the State of Hawaii.

Bldg. 3001 after removal of fire debris, roof, interior, and cutting passages.



tecnotes

AIR FORCE INDUSTRIAL WATER TREATMENT PROGRAM (IWP) — The laboratory test procedure (Table B-15 in AFR 91-40) for chlorides is being revised to make it easier, more accurate and less costly to run. Chloride tests are often the best method to test cooling tower water cycle concentrations. This determination is essential for an effective water treatment program. (HQ AFESC/DEMM, Mr. Myers, AUTOVON 970-6358)

CATALYTIC DESTRUCTION OF AIR STRIPPED VOLATILE ORGANIC COMPOUNDS — One of the most cost-effective and efficient technologies for removing volatile organic compounds (VOCs) from contaminated ground water is pack-tower stripping. This process, however, has come under fire from state regulatory agencies for being a source of air pollution. HQ AFESC in cooperation with the Environmental Protection Agency (EPA), is investigating cost-effective emission treatment processes that may open the use of air-stripping to situations to where it is currently banned. We evaluated two commercially available pilot-scale catalytic units which have been sold for treating VOC-laden airstreams. The first unit evaluated was a combination ultraviolet light catalytic incinerator. This unit failed to provide an adequate destruction efficiency (90 percent) of chlorinated and hydrocarbon fuel VOCs — typical groundwater contaminants. The second unit evaluated, a fluidized bed catalytic reactor, did provide adequate destruction efficiency of the study compounds. Potential users of catalytic treatment should be aware of the limitations of commercially available equipment.The final technical report detailing the results of the evaluations will be distributed shortly to all Air Force agencies responsible for Installation Restoration Program Phase IV cleanup actions. (HQ AFESC/RDVW, Capt. Ashworth, AUTOVON 970-4628)

POLYMER EQUIPMENT PLACEMENT SIMPLIFICATION — A 4-month test effort has succeeded in dramatically reducing the complexity of the equipment used to place the polyurethane concrete as part of a structural cap crater repair:

- Reducing the number of chemical pumps from seven to three;
- Cutting the cost of a placement boom from $60,000 to $10,000;
- Lowering the assembly cost from $150,000 to $40,000; and
- Decreasing the assembly time from 2,000 manhours to 500.

These simplifications led to equipment reconfiguration cutting the number of personnel required to place a cap from four to two, while also reducing the command and control requirements.*

MINIMUM OPERATING STRIP (MOS) MARKING PROCEDURES — Using commercially available equipment and simple procedures, recent tests have shown that a MOS can be marked in less than 30 minutes, compared to a 1983 capability of more than 9 hours. Test conducted on Tyndall AFB yielded times of 16 minutes for a 3-man crew to deploy a 50-by-5000-foot pattern of retroflective edge markers, visible to aircraft over 3 miles away from the MOS. Painting a centerline strip and threshold bars requires only an additional of 10 to 15 minutes. The MOS marking procedures are easy to learn, and can accomodate MOS's that are either parallel or skewed to the existing runway centerline.*

POLYURETHANE SPALL REPAIR SYSTEM IMPROVEMENTS — Recent tests identified improvements to the polyurethane improvement repair procedure. Debris can be blown out of the spall using a leafblower type unit, rather than with an air compressor costing 30 times more. A trailer has been developed and tested that will automatically pump, meter and mix the three polyurethane components that are used to complete the spall repair. A different system has been tested that uses pressure to combine the components directly from 55 gallon drums. Combining these and other improvements to the spall repair procedure is expected to reduce repair time up to 50 percent, reduce training and maintenance requirements, and decrease the cost of spall repair equipment by several orders of magnitude.* (HQ AFESC/RDCR, Lt. Gardetto, AUTOVON 970-6324)

RRR MONOMER AND POLYMER — The Air Force Engineering and Services Center and the Army engineers through the Investigative Engineering (IE) program, are testing the use of monomer and polymer concrete for rapid runway repairs to airfield pavements. Tests are in progress at McConnell, Hill and McClellan AFB's. Tinker AFB will be testing the materials in 1986. (HQ AFLC/DEMG, Mr. Borgwald, AUTOVON 787-6939)

Welding Fires:
The Saga Continues

by **CMSgt. Donald W. Warner (USAF, ret.)**

Fires caused by the welder's torch have been a major fire problem for many years and continue to be. Why? Primarily because adequate fire safety precautions are not taken before, during and after the operation.

Air Force Occupational Safety and Health Standard 127-5 was developed specifically to eliminate these fires; and, when fully complied with, almost no fires from the welder's torch will occur.

Responsibility

The commander is responsibile to make sure all personnel receive workplace safety training which includes safety requirements for such hazardous of welding, cutting, brazing, etc. Supervisors are responsible for conducting this training for their employees and making sure they understood the requirements. Supervisors should do enough spot-checking to ensure compliance. The person with the torch is responsible for performing the operation safely so a fire doesn't develop.

Fire prevention personnel, as advisors to the commanders, must advise them of the requirements, assist them to develop their training program and help them conduct the training if they need help. After supervisors and workers know requirements, they must be held accountable for compliance; however, they must be made aware of the requirements *first*, otherwise they may avoid responsibility for fires they cause.

As managers of the base fire protection program, firefighters must take aggresive action to eliminate the cause of fires. So long as welding fires continue, we haven't done all that can be done because these fires can be prevented. Now's a good time to take a new look at your welding fire safety program.

One of the responsibilities of fire protection is to develop *specialized*, fire safety training for those personnel involved in special operations or occupations with increased risk of life. For example, we have specialized training for employees of public assembly facilities and occupants of military family housing; yet, despite the number of welding fires which have occurred, many bases do not have a specialized training program for welders.

People

Consider all the people who may be conducting welding/cutting/brazing operations:

- Crafts people from civil engineering metal, plumbing, heating, air conditioning, and refrigeration shops.
- Hobby shop personnel.
- Housing maintenance personnel.
- Automobile repair personnel (base maintenance, BX garage, etc.).
- Contractors operating on base. Don't ignore these people because they are bonded and insured. Such coverage may not cover all the costs to repair fire damage and certainly will not prevent mission impact.
- BX/Commissary/MWR activities operations which lead to the use of a torch.
- Hospital maintenance personnel.

Checklist

Our primary task is education. We must make sure that those involved in welding operations know the fire safety requirements and that managers at levels exercise enough control over the operations to sustain fire-safe operations. The following suggestions may assist you to evaluate or establish your program:

- Supervisors must make sure that AFOSH Standard 127-5 requirements are included in the workplace safety training for personnel involved in welding operations. Workplace safety training is required for all personnel in accordance with AFR 127-12. Usually, each unit has a checklist they use for this briefing. Don't forget about those not in civil engineering.
- Develop specialized training for welders to include all the fire safety requirements. Let people know it's available and offer it to supervisors. Offer assistance to supervisors in training welders.
- Work with contracting to make sure that contractors operating on base are aware of the safety requirements when welding operations are involved, including those who perform housing or construction tasks. Fire safety requirements must be included in these contracts.
- Make sure fire inspectors who perform welding inspections know what they're looking for. They must be intimately familiar with AFOSH Standard 127-5.
- Establish procedures to perform welding inspections in a timely manner.
- Quality assurance evaluators should check for welding permits (AF Form 592) during their site visits.
- Perform a fire prevention inspection prior to each cutting, welding, or brazing job. Make sure the inspector perceives these operations as the serious fire threat they are; and directs fire inspections after the job is completed when circumstances dictate.
- In cases where you're unsuccessful in gaining control of these operations because of complacency or lack of cooperation, don't hesitate to evaluate the problem to the level necessary to get it solved. The solution may include mandatory fire safety training conducted by fire protection personnel, for all persons involved in torch operations.

Welding fires constitute a major cause of concern, the record speaks for itself. It takes a concerted, team-oriented, positive approach to solve the problem — and you can never let up. ★

Donald W. Warner (CMSgt., USAF, ret.) wrote this article while assigned to the Air Training Command fire protection branch. He previously was assigned to the Fire Protection Groups, HQ Air Force Engineering & Services Center, Tyndall AFB, Fla. He served in Southeast Asia and as a fire protection instructor at Chanute Technical Training Center, Chanute AFB, Ill. He graduated from the Tactical Air Command's NCO Academy, Tyndall AFB, Fla.; the Senior NCO Academy, Gunter AFB, Ala.; and holds an associate's degree from the Community College of the Air Force.

Designing the right tools, adequate communications and a productive place to work...

...are some of the goals of the Base Civil Engineering (BCE) Tool Communications, and Workplace Environment Contract, the second major contractual effort under Project IMAGE (Innovative Management Achieves Greater Effectiveness). Other areas targeted for improvement by this contract are materials handling and warehousing systems, the feasibility and value of tool allowance programs; and, an analysis of survey equipment.

by Capt. John E. Bravo

Overcoming major roadblocks to improved BCE workforce efficiency started in January 1983, when — stimulated by a directive of the Office of the Secretary of Defense (OSD) — the Operations and Maintenance directorate, HQ Air Force Engineering and Services Center (AFESC) hosted the Real Property Maintenance (RPMA) Functional Review Workshop. This evolved into Project IMAGE. Workshop membership included civil engineering personnel from the Air Staff to the base level, who provided an innovative and creative response to what could have been a mundane and unrewarding effort. One of several workshop outputs was a rank ordering of the top 10 major obstacles to productivity within civil engineering. The first obstacle was a shortage of general purpose vehicles. Improper O&M tools, and inadequate communications were identified as the second and third most important constraints to BCE productivity.

We are fortunate to have as a contractor on this project Booz-Allen and Hamilton, the same firm that recently completed the general purpose vehicle requirements study. Their schedule for the effort spans one year ending in November 1986.

The schedule developed by the contractor is quite comprehensive and takes into account the extensive preparation and preplanning that must be accomplished in order to both efficiently and successfully complete this effort. The travel schedule for data collection is wide ranging. Bases have been selected to insure exposure to the widest possible slice of the BCE mission. The European and Pacific Theaters, northern and southern tier bases, and bases with both complex and straight-forward mission will be visited.

Execution has been divided into two phases:

- Study development and test
- Field study and analysis

Phase I has been further subdivided into seven tasks with varying elements placed in each task area.

During the first 120 days of the assignment, the contractor has focused on the initial familiarization briefing, a team visit to the BCE organization at Tyndall AFB, and a first round of field study trips to initiate the major study tasks. Several features of this phase are important:

- The approach to warehousing, communications, and work center environment tasks was tested in the field.
- The tools task was initiated at this early stage because of the anticipated extensive data survey requirements.
- A data collection visit to Ramstein was accomplished in this phase, in addition to Tyndall and Dallas/Ft. Worth (DFW) airport, because of special conditions in USAFE that will effect the approach to at least the tools and communication tasks.

Refinement and reporting of procedures for the remainder of the study will be the result of Phase I, as will reports of preliminary task findings. Work in this pilot phase is directed primarily at an initial run-through and report of findings of the warehousing and communication workshop and environment tasks. Because of the substantial commitment of resources and time that will be made later, the contractor has proceeded carefully not only in the testing of the major tasks, but also in structuring and testing initial work plans for the remaining tasks. During this phase, they have concentrated on assessment of the quality and credibility of the data bases. This has helped not only in designing appropriate information requests for major installations worldwide, but will help in assessing the quality and meaning of the data returned from Phase I.

The second phase of the study is a straight forward process of field visits, information surveys, analysis, reports, and implementation

OBJECTIVES
• DEFINE THE RIGHT TOOLS FOR O&M SHOPS
• DETERMINE COMMUNICATIONS EQUIPMENT NEEDS
• DEVELOP STANDARD MODULAR MATERIAL HANDLING SYSTEM FOR BCE
• IDENTIFY NEEDED O&M WORK CENTER IMPROVEMENTS
• DETERMINE VALUE OF TOOL ALLOWANCE PROGRAMS
• SPECIFY PROPER SURVEYING EQUIPMENT
• DEVELOP IMPLEMENTATION PROCEDURES

planning — in that general order.

There will be visits to Tyndall and Ramstein again in this phase. Both locations will provide important information on the tools, communications, and implementation tasks that will be needed after survey results and initial Phase II field data accumulate. The combination of the HQ AFESC presence and a BCE at Tyndall represents a good opportunity to test findings and recommendations. Ramstein represents an especially complex overseas base situation that must be effectively dealt with in the study in order for implementation to succeed.

Teams for this study range from two to six persons, given field assignments over a period of 14 to 16 weeks. At a minimum, the teams will conduct a thorough study of military installations previously listed. They will provide enough capability to accomplish some iteration of the field work if needed, or handle isolated situations where information gathering is hindered by special problems or conditions.

Of the 14 bases to be visited in this phase, larger teams (consisting of four to six people) will spend about a week of concentrated effort at each of seven bases. They will obtain data that has been specifically requested before the visit, and interview work center managers and personnel in depth. A small team of two to three people will be sent to the remaining bases to brief, interview senior personnel, pick up data, and test initial findings made at the analysis sites.

For each required task the contractor has flow-charted their expected analysis approach. The steps in the tool task are:

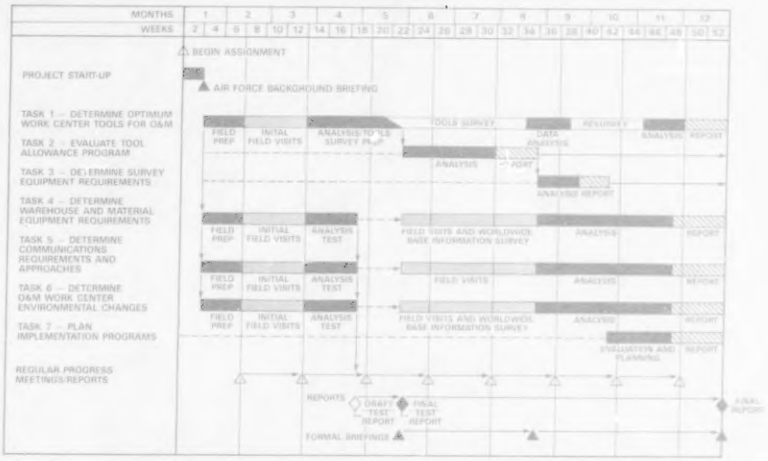
- Steps 1 & 2 — Data base development
- Steps 3, 4, & 5 — Definition of relationships (modeling)
- Step 6 — Initial solution (by shop)
- Step 7 — Review & refine. Can we economically justify this?
- Step 8 — What do the foremen and craftsmen think?
- Step 9 — Do we agree? Analyze differences; determine final position; and
- Step 10 — Finalize/publish.

Tool allowance programs are also being investigated. Unique to this task is a determination of possible alternatives, a definition of barriers to such a program, and calculation of cost benefits to the BCE. Such programs are relatively common in private industry.

The elimination of obsolete surveying equipment was identified

SCHEDULE

PROJECT SCHEDULE — AIR FORCE BCE TOOL COMMUNICATIONS AND WORK CENTER ENVIRONMENT STUDY



SCHEDULE/BASE VISITS

- **TYNDALL AFB, FL**
- **LUKE AFB, AZ**
- **EGLIN AFB, FL**
- **LANGLEY AFB, VA**
- **DOVER AFB, DE**
- **ELMENDORF AFB, AK**
- **GRIFFISS AFB, NY**
- **LOWRY AFB, CO**
- **RAMSTEIN AB, GE**
- **GRAND FORKS AFB, ND**
- **TINKER AFB, OK**
- **KADENA AB, OKA**
- **OSAN AB, ROK**
- **MISAWA AB, JA**

APPROACH FOR DETERMINING THE OPTIMUM SET OF COMMERCIALLY AVAILABLE TOOLS (TC-1)

by the first Engineering Functional Review Workshop as an opportunity to improve productivity in site development. The objective in analyzing surveying equipment is to provide both rugged and efficient equipment that will support the majority of base level peacetime requirements and is appropriate for Prime BEEF deployment.

Tailoring warehousing systems and material handling equipment requirements to BCE needs, represents an opportunity for productivity improvement that has long been overlooked. The costs associated with our labor intensive handling of materials and inefficient utilization of warehouse space can be significantly reduced. Warehousing system and material handling equipment recommended as alternatives to our current way of doing business will complement the upcoming Civil Engineering Materiel Acquisition Systems (CEMAS). The results will be in the form of standardized warehousing and material handling equipment packages that are tailored to utilization in facilities not originally intended for use as warehouses.

As mentioned early in the article, inadequate communication is perceived as the third most significant constraint to improved BCE productivity, closely following the lack of adequate general purpose vehicles and improper tools. Two issues are involved in BCE communications analysis: the concern for peacetime productivity and wartime compatibility and effectiveness during worldwide deployment. Phase I of the study expended much effort in clearly defining the technical aspects of the problem and in discussing possible alternatives with organizations identified as actively interested in the problem. To date, HQ USAFE/SILX, HQ AFCC/SIMC, HQ TAC/SIPT and the Systems Management Office for Air Base Survivability (AD/YQO) have contributed significantly to insuring that all relevant technical issues are considered. The intent is to insure that more than a one-dimensional solution to the problem is found.

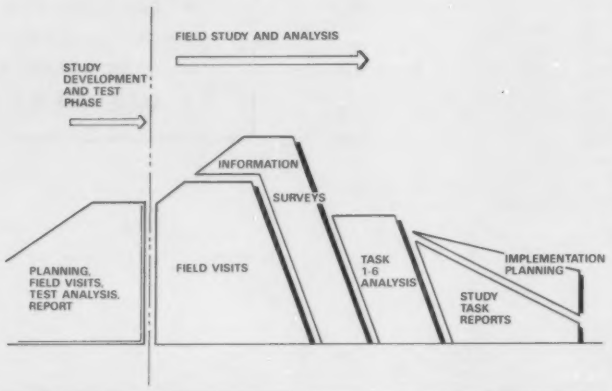
To briefly summarize, in approximately 8 months we will have a clear definition of the right tools needed by our craftsmen and we will know the value of adequate communications in terms of improvements to productivity. Additionally, the technical issues involved in choosing communications equipment will have been defined and a solution recommended. Standard sets of material handling and warehousing equipment will have been defined in such a way that BCE needs may be more efficiently met in spite of the inadequate facilities we are continually forced to use. Those workcenter productivity improvements that can be justified will be identified for 115 air bases and the feasibility and value of tool allowance programs will have been determined. Surveying equipment will be recommended that is more efficient and durable enough to be deployed. And last, to give us a head start on implementing any recommendation that may by approved, the contractor will spell out recommended implementation procedures. ★

FOCUS OF WORK STEPS IN THE STUDY TEST PHASE

TASK AREAS	FAMILIARIZATION AT TYNDALL	FIELD DATA COLLECTION PLAN	ALL BASE SURVEY PLAN	ALL BASE INFORMATION REQUESTS	FIELD STUDY – TYNDALL OPR RAMSTEIN	REPORT AND PRELIMINARY FINDINGS	REFINEMENT OF STUDY APPROACH
TASK 1 – TOOLS	●	●	●	○	●	◒	●
TASK 2 – TOOLS ALLOWANCE	●	○	○	○	○	◒	●
TASK 3 – SURVEY EQUIPMENT	●	○	○	○	◒	○	○
TASK 4 – WAREHOUSING	●	●	○	●	●	●	●
TASK 5 – COMMUNICATIONS	●	●	○	◒	●	●	●
TASK 6 – W/C ENVIRONMENT	●	●	○	●	●	●	●
TASK 7 – IMPLEMENTATION	◒	○	○	○	○	○	◒

● PRIMARY FOCUS
◒ SECONDARY ATTENTION
○ NOT SPECIFICALLY ADDRESSED

OVERVIEW OF SECOND STUDY PHASE



Capt. John E. Bravo is a management systems analyst in the Operations and Maintenance Directorate, HQ AFESC, Tyndall AFB, Fla. He has previously served as chief of operations and maintenance, resources and requirements, industrial engineering, contract management and programs at ATC, TAC, USAFE, and PACAF. He holds a bachelor's degree in Industrial Engineering and a masters of science in Information and Computer Science from Georgia Tech.

Promotions and Reassignments

Robert W. Bouchonnet (Nellis) to GS-1173-12, Housing Mgr (Nellis) P

Larry J. Bridges (Pentagon) to GM-801-14, Supv General Engineer (Pentagon) R

Richard Cepeda (Laughlin) to GS-801-12, Chief, Engrg/Env Plng (Goodfellow) P

Theodore P. Chao (Kelly) to GS-801-13, General Engineer (Pentagon) P

Frank Disparte (Norton) to GS-020-12, Supv Community Planner (Norton) P

Al Ennis (Randolph) to GS-1173-11, Housing Mgmt Spec (ATC Randolph) P

Sherwood L. Evans (Langley) to GM-801-14, Deputy Director of Force Development (Langley) P

Mark D. Everett (Scott) to GM-801-13, Chief, Engrg/Env Plng (Scott) P

John C. Ferguson (Little Rock) to GS-1173-11, Housing Mgr (Zweibrucken) P

Raymond Harris (Randolph) to GS-1173-12, Housing Mgr (Lakenheath) R

Ray Hatch (Torrejon) to GM-301-14, Chief, ESCCMP (AFCPMC Randolph) P

Paul G. Hemmila (K.I. Sawyer) to GS-801-12, Chief, Tech Design (K.I. Sawyer) P

James Huff (Castle) to GS-1173-11, Housing Mgr (Myrtle Beach) R.

Michael Jusko (Hill) to GM-801-13, Chief, Contract Plng (Hill) P

Elmer C. Kaylor (Tyndall) to GS-801-12, Chief, Engrg/Env Plng (San Vito) R

Walter Kitson (Sheppard) to GS-1667-11, Food Svs Mgr (McChord) R

Claire F. Lang (Misawa) to GS-1173-09, Housing Mgr (Whitman) P

William E. Morrison (Langley) to GS-1173-12, Housing Mgr (Spangdahlem) R

Richard Mousel (Luke) to GS-801-12, Chief, Tech Design (Luke) P

Al Myers (Colorado Springs) to GM-801-13, Deputy BCE (Torrejon) CLG

Lawrence A. Ogawa (McChord) to GM-801-13, Chief, Tech Design (Kadena) R

Dale C. Olson (Luke) to GM-801-13, Supv Gen Engr (Luke) P

Donald Pachner (Mt Home) to GM-801-12, Chief, Engr/Env Plng (Mt Home) P

Ernest W. Peele (Bolling) to GS-1170-12, Realty Officer (Eglin) CLG

Laura Perritt (SARPMA Ft Sam) GM-801-13, Chief, Const Mgr (SARPMA Ft Sam) P

Alvin Ravicher (Lowry) to GM-810-13, Supv Civil Engr (Ruislip) P

Warren Sekiguchi (Kadena) to GM-801-13, Supv Gen Engr (Kadena) P

Lee E. Schmidt (Langley) to GM-801-13, Design & Const Engr (Ramstein) P

Ruth Y. Spivey (ATC Randolph) to GM-301-13, Engr & Svs Career Pgm Administrator (AFCPMC Randolph) P

Robert Stavroff (Grissom) to GS-801-12, Supv Gen Engr (Grissom) P

Robert B. Strom (Moody) to GS-801-12, Chief, Tech Design (Moody) P

Edna P. Teicher (Anderson) to GS-1173-10, Housing Mgt Spec (ATC Randolph) P

Darrell Tomlinson (Hill) to GM-801-13, Chief, Contract Mgt (Hill) P

Robert D. Waite (Hill) to GS-1173-13, Housing Mgt Spec (Pentagon) P

George Wentz (ATC Randolph) to GM-801-15, Deputy, SARPMA (Ft Sam) P

Charlotte Wickstrom (Elmendorf) to GM-801-14, Director, Pgms & Env Plng (Elmendorf) P

Painting by Numbers

by 1Lt. David L. Carlon and SSgt. Yan Seiner

Every year, the Air Force spends millions of dollars painting facilities on Air Force bases world-wide. Here at Charleston AFB alone, we annually spend close to half a million dollars on protective coatings. In recent years, the need for more effective expenditure of appropriated funds has created a demand for a more systematic method of managing painting at military installations. The attitude of "if it doesn't move, paint it" has simply become too expensive.

Several years ago at Charleston, we had attempted to plan and schedule painting of buildings to eliminate unnecessary painting. This first scheduled paint plan was put on paper. To keep the size of the schedule reasonable, only a bare minimum of information was included. Updating the plan every 6 months required the retyping of the entire schedule. The typewritten paint plan, though a step in the right direction, was inadequate in many ways. We wanted more information, and a more meaningful product describing the status of painted facilities on the base.

The requirements of the paint plan made it an ideal candidate for computerization. Initially, an appropriate format for the report was selected, and the data entered into our Burroughs main frame computer. Although this provided limited usefulness because of the inflexibility of the system, the improvement was immense. The use of a computer enabled us to show more information, and avoid retyping the entire paint plan when only a few relatively minor changes were required.

With the introduction of the Zenith Z-100 desktop computers at Charleston AFB, a whole new range of functions became available. We developed a menu-driven system, which allowed for much easier access to the information than the Burroughs main frame computer. We hope to eliminate the paper product entirely, except for a brief monthly or quarterly summary. Any information will be obtained directly from the Z-100 screen, with hardcopy obtained only for facilities under discussion.

The system is still under development, but new uses are being discovered almost daily. Suggestions at a recent HQ MAC protective coatings seminar included extending the paint plan to include interiors, and developing a similar system for our built-up roof program.

The paint plan is a very useful managerial tool. It allows for quick, easy access to information, and also for computerized analysis of that information. It may tempt managers to embark on a program of this nature without adequately providing resources and manpower to implement it properly. It is wise to remember the cardinal rule of computers: Garbage In, Garbage Out — GIGO. Implementing the paint plan is no small undertaking. At a base like Charleston, over 1,000 buildings are tracked.

Prior to embarking on a project of this scope, some important questions must be answered.

• Who will collect the data required to initiate the plan?

At Charleston, the effort was initiated and the information compiled in the Engineering Design section, but required input from planning, the paint shop, contract management, and others with painting experience on base. The collection serves two purposes: to obtain the physical dimensions of each building, and to identify the condition of the painted surfaces on each building. All exterior surfaces of each building on base should be measured and identified as to:

- *Surface to be painted*
  1. Item to be painted (Columns, roofs, walls, etc.)
  2. Construction material (CMU, wood, steel, etc.)
  3. Color (Federal Paint code)
  4. Type of paint (latex, oil, etc.)
  5. Sq./Linear footage
- *Historical data*
  1. Last painted
  2. Project/WO number
- *Scheduled work*
  1. Year/month scheduled
  2. Project/WO number
  3. Contract/in-house

Needless to say, this involves many manhours. It needs to be addressed before the paint plan can be implemented. If your base has maintained accurate records of old paint projects, the initial job is made much easier.

• Who will initially enter the information into the computer?

Once all the information is collected, it must be entered into the computer. Typists will have to be trained and given adequate time to learn the entry and editing functions of your particular desktop computer. This procedure cannot be rushed, and must be planned.

Don't be lulled into thinking that no further work is required after all the data is entered, and that you can now reap the benefits with no further investment. This final ingredient of a successful paint plan brings us to our third question.

• Who will maintain the paint plan?

Maintaining the paint plan requires close coordination between contract inspectors, planning personnel, customer service, and/or paint shop personnel. Every time a building is painted, even spot painted or simply cleaned, an entry has to be made in the paint plan to keep it current. This process requires no more time or investment than what is currently being invested in paper filing systems. The added benefit of a computerized file is that everyone concerned uses the same information to evaluate paint requests, plan future work, monitor existing facilities, and truly manage all painting done on the base. The bottom line is less duplication of effort, both in paperwork and on the job.

• What have I got after I've fed my computer the facts?

Although the system is still under development, it already provides us with information. It is exciting to consider further capabilities. It can tally and total the square footage and number of buildings to be painted, break out buildings by type of paint, type of construction material, color, or virtually any other information that you have entered. It can perform statistical analysis of various types of data. It can select buildings that have not been painted for a number of years, or buildings that have been painted recently. It enables you to monitor buildings that have recently been painted and have traditionally been a problem. It can serve to provide a quick estimate for an upcoming project. It allows the engineer to devote more time to preparing good, technical specifications and less time researching old records, or simply trying to determine how many buildings need to be painted. It can run circles around any system that is based on paper records.

Hardware and Software Requirements

At present, many computer-based systems function as little more than storage/retrieval systems. The final product still consists of a stack of paper, with needed information buried somewhere within it. The task of extracting and analyzing this information is left to the manager. This paint plan is a first step to a management information system — a system where much of the extraction and analysis is performed by a computer. The system does away with the printed listing as much as possible, replacing it with summaries of only the information you, as the manager, need. To achieve this, the system relies on functions available on desktop computers that are not available on mainframes. The system allows you, as the user, to create a file containing only the records you need, and then analyze those records in the way you want.

Large computers, or mainframes, contain large quantities of sensitive information. To protect this information, mainframes limit the range of functions the end user has available. Desktops have very few such restrictions. Security is provided by removing the floppy disk and storing it in a safe place.

Because of these considerations, and easier access to the desktop, we chose to implement the system on the Z-100.

The system is written using the Condor Relational Database Management System. In order to implement it on your Z-100 or similar desktop computer, you need to have MS-DOS, and the license for the 16-bit version of Condor rDBMS, to avoid copyright violations and possible charges of piracy.

Minimum hardware requirements are a desktop computer with 196K of memory, and two 5-1/4" floppy disk drives. A much better system would consist of a desktop with one 5-1/4" floppy disk drive and a 10 megabyte hard drive — also called a Winchester or hard disk. If you plan to have more than approximately 500 buildings in your paint plan, a hard drive is almost a necessity.

If you have any suggestions, questions, or comments, please contact the authors at 437 CES/DEEE, Charleston AFB, S.C. 29404; AUTOVON 583-3811. ★

Editor's Note: Interior painting does not lend itself to programmed application, particularly living and office spaces. A new program is being developed to cover the built-up roofing program.

1Lt. David L. Carlon is an architect in the Design Branch of the 437th Civil Engineering Squadron at Charleston AFB, S.C., where he is monitor of the base paint plan. He has completed S.O.S. and is currently enrolled in the N.C.A.R.B. intern architect development program. He is an associate member of the American Institute of Architects and has served as secretary of the Charleston Post of the Society of American Military Engineers. He received his bachelor's degree in Architecture from the University of Arkansas.

SSgt. Yan Seiner is an engineering assistant, 437th CES at Charleston AFB. He has an associate degree in Surveying Technology from the Community College of the Air Force and a bachelor's degree from Sophia University in Tokyo, Japan. He is presently pursuing his master's credentials in Computer Resource Management at Webster University. Prior to entering the Air Force, he worked as a computer programmer at the United Nations University in Tokyo, Japan. During his Air Force career, he has developed a computer-based system for tracking supplies, a program for fuel tank calibration, and several programs with surveying applications. He has recently been admitted to Princeton University to study Electrical Engineering and Computer Science.

Directorate of Engineering and Services

Current Emphasis

IMAGE

AFR 85-1 Comments are being received from MAJCOMs. We will begin incorporating these with a goal of publication in 1986. (HQ AFESC/DEMG, Maj. Kochanek, AUTOVON 970-6375)

Production Control Workshop — Plans are being finalized for a completed worldwide Production Control Workshop for base production control chiefs. We're looking at three regional workshops in June, sponsored by PACAF, USAFE and TAC. (HQ AFESC/DEMG, SMSgt Zielinski, AUTOVON 970-6125)

Economical Vehicles — HQ AFLC/DE has found an economical interim solution to the Booz/Allen vs Gramm/Rudman vehicle dilemma. Scooters! AFLC has had good results with 118 Heald Haulers purchased with O&M funds under TA 010. Base civil engineering reports these rugged four-wheel haulers are ideal for certain shops. (HQ AFESC/DEMU, Lt. Col. Celmar, AUTOVON 787-4107)

Financial Management Functional Review Workshop — A highly productive workshop of MAJCOM and base financial management experts was held Feb. 24-28. Proposed enhancements relate to education and training, funding flexibility, civilian pay management, the appliance process, and the rent or lease of equipment. These will be refined further and will be pursued under the IMAGE program. (HQ AFESC/DEMG, Ms. Bentz, AUTOVON 970-6387)

GSA Vehicle Leasing — Seven Air Force bases have been selected as validation bases for the vehicle-to-personnel ratios recommended to the Project IMAGE Booz-Allen and Hamilton General Purpose Vehicle Study. The bases (Goodfellow, K.I. Sawyer, Travis, Tyndall, Offutt, Lowry, and McClellan, will receive enough vehicles to provide one vehicle for each BCE work crew. Results of this validation should be available in December 86. (HQ AFESC/DEMG, Ms. Ponshock, AUTOVON 970-6440)

PLANNING

Disaster Planning — The unpredictable nature of contingencies requires that innovative response procedures be developed for a variety of circumstances. Since civil engineering functions impact more areas of the base than any other single organization, a two-volume draft pamphlet, AFP 93-XX, has been developed. Volume I concentrates on actions each unit should take in preparing for the most likely emergencies, while Volume II shifts to expedient and innovative repair methods for rapidly restoring an airbase to its mission. Both volumes are available in limited quantities, while the supply lasts. (HQ AFESC/DEOP, Mr. Smith, AUTOVON 970-6128)

AFR 140-6, Base Services Contingency Planning — HQ USAF/DAP has completed their review and advised that, because of the directive language and specific duties outlines, this publication should be a regulation rather than a pamphlet as we had originally proposed. A new regulation is set for this spring. (HQ AFESC/DEOP, Capt. Denton, AUTOVON 970-6139)

War Mobilization Plan (WMP) — HQ AFESC/DEO has initiated its annual update of WMP-1, Annex S (E&S annex), and WMP-3. WMP-1, Annex S, provides general planning guidance for E&S combat support during contingency operations and general/strategic nuclear war. WMP-3 provides a list of E&S mobility forces (UTCs) allocated to the different theaters of operations. Commands have been asked to provide their recommendations for revision. (HQ AFESC/DEOP, Mr. Smith, AUTOVON 970-6128)

The USAF Scientific Advisory Board's HQ USAF/LEE Advisory Group met on Dec. 5 and again on Jan. 16 to review Engineering and Services wartime roles and associated operational capabilities. The five-

member group is headed by Dr. Bob Whitman, professor and head of the Civil Engineering department at the Massachusetts Institute of Technology. The group's charter is to identify opportunities for more closely integrating technology between the weapon system and its associated basing system. (HQ USAF/OSR, Mr. Henriksen, AUTOVON 297-5010)

POLICY

AFR 8-7, a New Air Force Regulation on Air Force Engineering Technical Letters (ETL), has been published, governing the use and implementation of ETLs. ETLs are directive in nature and apply to all facilities constructed on Air Force installations except medical facilities and family housing. ETLs are a rapid means of providing specific design guidance, policy, and procedures to all levels of command. An index listing current and obsolete ETLs has been published as AFR 0-16, Indexes, Engineering Technical Letters (ETL), and will be updated and issued twice a year. (HQ USAF/LEEU, Mr. Rochelle, AUTOVON 297-6237)

ENERGY

Engineering Technical Letter 86-1, dated Feb. 3, is mandatory per AFR 8-7, Air Force Engineering Technical Letters (ETL). It supersedes ETL 83-10, Energy Budget Figure (EBF). It provides EBFs which are approximately 10 percent less than before, in response to OSD guidance of Dec. 12. It also provides most category codes, an expanded weather zone to include bases in Greenland and Alaska, and energy distribution charts (heating, cooling, ventilation, lighting, and heating of domestic hot water) for 10 different types of buildings to aid design reviewers in identifying which may be using too much energy.*

USAF vs British Property Services Administration (PSA) — Recent meetings between HQ USAFE and PSA personnel revealed that USAF EBFs are more stringent and more detailed. While PSA has four major categories, USAF has 10. One major difference was dormitory EBFs, where their analyses show a much higher EBF due to heating large amounts of domestic hot water. It appears that heating of domestic hot water should be considered a process load like in a gymnasium. LEEEU is carefully reviewing their comments. Overall, PSA determined they will be decreasing their EBFs substantially to take into account current design and construction methods.*

Air Force Passive Solar Handbook — A firm has been selected to develop a four-volume passive solar handbook for base support facilities. An Air Force pamphlet, it will include all 10 types of buildings, but not military family housing. Volume 1 will be designed with many colorful illustrations or photographs to help base civil engineering personnel to sell energy efficient sites, building shapes, and passive solar applications to base or wing commanders. Also included, will be helpful comments of which are more energy conserving, depending on base location, and aspects of energy security. It should be ready for reproduction by Air Force publications by early calendar year 1987.*
*(HQ USAF/LEEEU, Mr. Fernandez, AUTOVON 297-4083)

Energy Security — Revisit those installation energy vulnerability assessments accomplished in FY 84-85 and develop projects and programs to eliminate shortfalls. Energy is essential to peacetime training, readiness, and credible deterrence; to quality of life and workplace; and to wartime operations. Installation energy must be as survivable and sustainable as the mission and the mission assets it supports. Look in the 1986 revision of AFR 93-2 for recent guidance on energy in contingency response planning. The Energy Group at HQ AFESC has an on-going list of no-cost/low-cost energy security measures that can be taken easily to increase installation energy security. It's free for the asking. (HQ AFESC/DEB, Mr. Hathaway, AUTOVON 970-2722)

Nuclear Energy — After redesign concepts for a secure, 10-megawatt (electric) power reactor were reviewed, and the Department of Energy (DOE) was notified that we are ready to proceed in the next phase of our joint program — competitive selection and design of concept. Supporting studies and

analysis are continuing. DOD procured design concepts from six nuclear vendors (GA , Rockwell, Babcock and Wilcox, Westinghouse, General Electric, and Combustion Engineering) and submitted for them to review in May, 1985. Aided by outside impartial expertise, the Air Force review addressed security, nuclear surety, technical credibility, example site analyses, costs, and key institutional issues. The review emphasized safety, environmental concerns, and the capability of the technology to meet current current and recurring requirements for secure, sustainable, and survivable mission-essential energy. Current public affairs guidance is in OSAF/PAM Msg. 13213OZ Mar 86. (HQ AFESC/DEB, Mr. Hathaway, AUTOVON 970-2722)

Facility Energy Policy — 14 draft Air Force Energy Program Policy Memoranda (AFEPPM) were received by MAJCOM representatives attending the 4th annual Facility Energy Working Group (FEWG) during January. Comments are being incorporated, and final AFEPPMs should be published by the third quarter of FY 87. Subjects range from energy efficiency goals to energy security to alternative financing.

Shared Savings Legislation — Congress has drafted legislation giving federal agencies the authority to enter into 25-year shared savings projects. Department of Energy's Federal Energy Management Program Office expects the legislation to be passed later this year. (HQ AFESC/DEB, Mr.Beason, AUTOVON 970-6461)

COMPUTER CORNER

WIMS/SIMS Acquisition — The Air Force Minicomputer Multi-User System (AMMUS) contract was awarded to Wang Laboratories in January, 1986. With this key milestone passed, HQ AFESC/SI is pressing foward with ordering systems. The first system has been ordered and should be installed early May, 1986.*

WIMS/SIMS Implementation — Implementation planning is underway for the WIMS and SIMS. A new schedule has been made based on award of the AMMUS contract to Wang Laboratories. Site visits are underway for the lead bases in every major command and will be followed by hardware installation and software implementation visits over the next year. Those organizations currently operating a WIMS "early lease" system are replacing or upgrading their systems to provide a fully functional information management system.* (HQ AFESC/SI, Maj. Hamill, AUTOVON 970-6418)

READINESS REVETMENT

Weapons — New policy guidance received from HQ USAF/LEE in November states that Prime RIBS teams will deploy with weapons. This issue was discussed in detail at the Prime RIBS Conference/Curriculum Review, held at HQ AFESC the week of Feb. 24. AFESC/DEO will be providing more information in the future. (HQ AFESC/DEOP, Capt. Denton, AUTOVON 970-6139)

Prime BEEF Curriculum — HQ AFESC/DEOT sponsored a Prime BEEF Curriculum Working Group at Det. 2, HQ AFESC, Eglin AFB, Fla. (the AFESC Contingency Training Site), Jan. 21-24. USAFE, PACAF, AAC, TAC, MAC, AFIT, and HQ AFESC/DEOP representatives reviewed the curriculum in detail to determine its adequacy to meet the basic training requirements needed to enable engineering personnel to perform their wartime mission. The group was very productive and offered many significant proposals for improving not only the Det. 2 training program, but also training conducted through other avenues. A parallel Prime RIBS/FARE Curriculum Working Group met Feb. 26-27 at the Center. (HQ AFESC/DEOT, Capt. Smith, AUTOVON 970-6134)

Wartime Skill Requirements — Formal identification of individual wartime training requirements has been weak. Utilization Training and Workshops (UT&W) are being used to correct the problem. Using annex "S" of the War Mobilization Plan (WMP) as the guiding authority, HQ AFESC/DEO personnel, in concert with MAJCOM subject matter specialists, have started adding wartime requirements to each STS. Excellent results were obtained during the recent Heating and Electrician UT&W. The approach will continue.*

Sound-on-slide Programs are being developed to support AFR 93-3, Category I home station training. Additional areas are under consideration for inclusion.

- **Programs nearing completion**

0# 604725	Hardening of Facilities
0# 604729	Military Sanitation (two parts)
0# 064728	Base Denial
0# 602740	Expedient Repairs
0# 604509	Post-attack/Recovery

- **New programs approved for development**

Field Laundries, Part II
Preparation for Det-2 Deployment
Bare Base Conceptual Planning
Bare Base Site Specific Planning

- **Propective new programs**

Foreign Utility Systems (USAFE)
Foreign Utility Systems (PACAF)
Personal Work Party/Convoy Security
Rapid Runway Repair (ARRRT & PFM Methods)
BRAAT Overview
MOB & COB Orientation*

*(HQ AFESC/DEOT, CMSgt. McLeod, AUTOVON 970-6134)

Mobile Kitchen Trailer (MKT) — Priority listings for MKTs have been completed and provided to the Warner Robins Air Logistics Center (WR-ALC) item manager. These will be used for delivery schedule and instructions to ensure units are delivered on time. Delivery began in January to training sites. RED HORSE units, WRM requirements, and MAJCOM for home station training are next in line. (HQ AFESC/DEOP, MSgt. Halvorson, AUTOVON 970-6120)

Joint Task Force Bravo — CONUS MAJCOMS have been tasked through HQ AFMPC to provide Prime BEEF support at Palmerola AB, Honduras. A total of 32 people will be deployed with fire fighters. Deployment will be for 90 days on a continuing basis. (HQ AFESC/DEOP, TSgt. Black, AUTOVON 970-6740)

ENVIRONMENT

For the Birds — Birds of a feather each love a special habitat, good food, and some form of refuge from danger — particularly if they nest on the ground. What's new? Even insects like to eat, procreate, and have a space. Unfortunately, many bases provide just the right habitat to encourage birds or insects to locate near approach ways and runways. Birds are attracted to the insects, even if the environment doesn't support their nesting habit. BCEs should plan now to treat the environment around the aerodrome to inhibit birds and insects from creating a danger to aircraft. This also includes special care to insure that seeding grasses are not planted. One base planted millett — known to attract doves and other species. Also, certain succulent grasses are highly attractive to insects. A model Bird-Air Strike Hazard (BASH) reduction plan was sent through Safety channels to every base, worldwide. Anyone else needing the plan can request it directly from HQ AFESC. (HQ AFESC/DEVN, Capt. DeFusco, AUTOVON 970-6242)

PCB Transformers — Electrical personnel should be aware of new rules being published by the U.S. Environmental Protection Agency regarding use and protection of PCB transformers. These new restrictions stem from the concern over the production of toxic gases when PCB transformers are exposed to fires. Such transformers must either be removed from service, reclassified as not PCB transformers, or have certain protective equipment installed. There are also additional registration and reporting requirements. (HQ AFLC/DEMU, Mr. Blum, AUTOVON 787-4107)

General Ellis Is New Director

Maj. Gen. George E. (Jud) Ellis moved up from the deputy's position and became the 15th leader of Air Force civil engineering and the 4th director, Engineering & Services, HQ USAF, with the retirement of Maj. Gen. Clifton D. Wright Jr. on Feb. 28.

(See General Ellis' remarks before young Air Force civil engineers at the Air Force Institute of Technology, page 3; also see coverage of General Wright's retirement, page 17.)

General Wright and Mrs. Ellis pinned-on General Ellis second star in ceremonies before the E&S leaders, worldwide, representatives from the Defense and Air Force Secretariats, the other deputates of the Air Force Chief of Staff's organization, other armed forces engineers, the leadership of the Air Force Engineering & Services Center and the E&S directorate staff.

General Ellis was deputy chief of staff Engineering & Services, HQ Tactical Air Command, before assuming duties as deputy director.

He was last commander of the Air Force Civil Engineering Center, Tyndall AFB, Fla., and the first vice commander of HQ AFESC. In the Pentagon, he served as a project officer at the directorate level, was first chief of the Civil Engineering and Services Management Evaluation Team, and headed the Operations and Maintenance division when it was in Washington.

General Wright and Mrs. Ellis pin the second stars for General Ellis.

General Ellis talks to well-wishers.

He has served at Bartow AFB, Fla.; Webb and Randolph AFBs, Tex.; in Alaska; as base engineer at Chanute AFB, Ill.; was an advisor to the Vietnamese Air Force at Tan Son Nhut AB, Vietnam; and served as engineer for both Air University and Maxwell AFB, Ala.

He is a 1958 graduate of the U.S. Military Academy; holds the master of science degree in Systems Analysis, University of Arizona; the master of Business Administration degree, from The George Washington University; and has completed Squadron Officers School and the Industrial College of the Armed Forces.